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Equity ■ Balanced ■ Fixed Portfolios

Nuclear trusts to hit $60 billion

By Curtis Vosti

Nuclear decommissioning trusts will total $60 billion at maturity under the "most conservative scenario," a new survey shows.

The $60 billion estimate likely is the most accurate to date; surveyors received responses from 50% of the 92 utilities with nuclear capacity, and the respondents represent more than two-thirds of the nation's nuclear operating capability.

Previously, analysts had estimated the trove to be anywhere between $50 billion and $100 billion, although they admitted no definitive figures were available (*Pensions & Investment Age*, July 11).

Investment managers and consultants are expected to court utilities seriously to gain a piece of the trust business. Nuclear Regulatory Commission rules mandate the use of outside money managers by June 30, 1990.

The survey was developed by National Investment Services of America, a Milwaukee money manager.

It was conducted by Eager & Associates, a Louisville, Ky., market research firm.

Most of the survey respondents indicated they would hire just one external manager initially, but almost one-third said they expect to expand to between two and four managers after three years.

The survey noted 54% of the respondents said they have separate trusts in place, while another 37% said they are working in-house on a plan to meet NRC requirements.

"The survey demonstrates the great progress utilities have made," said Tom Tuschen, vice president of NISA. "When NISA first began exploring the investment needs of decommissioning trusts several years ago, only a handful were exploring the requirements for establishing an external trust."

There are three types of utilities, explained Mr. Tuscher: investor-owned; municipal; and cooperatives. According to the survey, investor-owned utilities expect real returns (after discounting for inflation) of up to 2% on their decommissioning trusts; municipals and cooperatives expect real returns of 5% or more, because of their tax-free status.

Most of the investor-owned utilities, which accounted for 92% of the respondents, said they will invest primarily in tax-exempt bonds and U.S. Treasury securities. Only 5% said they would invest in less-than-investment-grade bonds.

Changes in the laws affecting nuclear decommissioning trusts could alter that allocation, according to the survey. Currently, contributions by investor-owned utilities to qualified trusts are tax deductible but limited to so-called "black lung" investments, named after trusts set up to provide for coal miners afflicted with pneumoconiosis developed by inhaling coal dust.

Those restrictions basically limit trust investments to certificates of deposits at banks or credit unions, municipal bonds or Treasury securities.

If taxes on trust earnings, now at 34%, were reduced or eliminated, the survey showed, the investor-owned utilities would switch their fixed-income holdings to taxable bonds. ■

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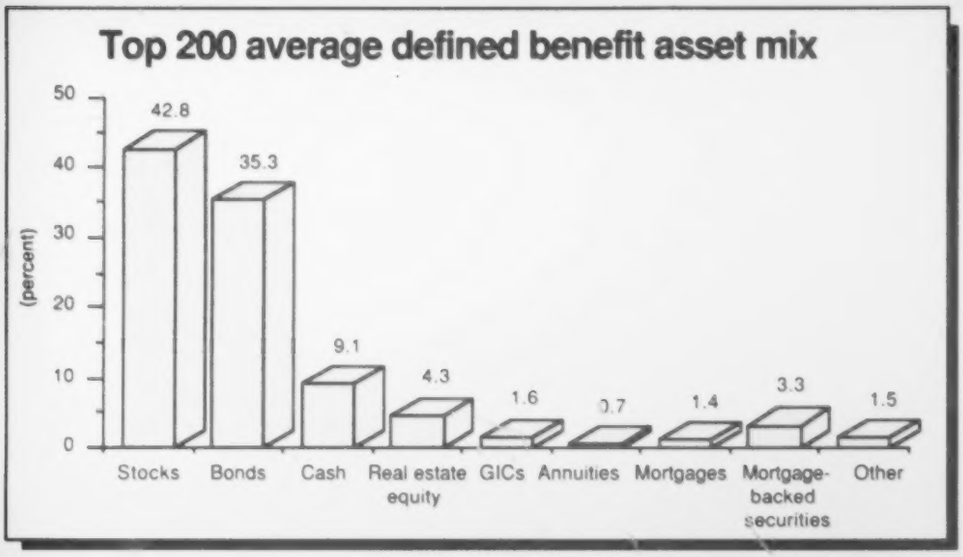
CORRECTIONS & CLARIFICATIONS

- Predictions on midyear and year-end 30-year Treasury bond rates were attributed incorrectly to **Richard Rippe**, chief economist at Dean Witter Reynolds Inc., in a Dec. 26 article. Mr. Rippe had no predictions for 30-year T-bonds at the time of the survey.
- In a chart of top index fund managers in the Dec. 26 issue the $250 million in international indexed assets managed **Axe Core Investors Inc.**, Tarrytown, N.Y., were listed inadvertently under fixed income index funds.



Funds reduce stocks

Allocations drop from pre-crash levels

By Barry B. Burr

More than half of the 200 largest pension funds reported reduced equity allocations during the year ended Sept. 30, reflecting the fallout from the largest one-day fall in the stock market in October 1987.

In statistics compiled by *Pensions & Investment Age*, 102 of the funds reported decreases, 36 reported increases and 11 reported no change during the year.

If the trend were extrapolated for the other 51 funds in the Top 200 whose reports weren't complete enough to determine asset allocation changes, it would indicate the equity allocation dipped for more than two-thirds, or 137, of the 200 funds, while it increased for 48.

Although some funds did report substantial drops in their equity positions, in the aggregate, the reduction was relatively small. As of Sept. 30, the Top 200 funds had 42.8% of their defined benefit assets allocated to equities, compared with 47.1% a year earlier.

While some funds might have made a conscious effort to realign their asset allocations, others might have found their asset mix already adjusted because of market activity.

The asset shifts offered few clues to performance of the Top 200 funds during the year. With widely varying asset allocations, they achieved widely varying results, using asset growth, net of any reported corporate pension contributions and benefit payments, as a proxy for performance.

The largest decrease in equities, a 32 percentage-point drop to 32% from 64% of assets by the $8.717 billion Maryland State Retirement Systems, Baltimore, was the result of a growing unease about the stock market and was done, almost presciently, days before the October crash (*P&I Age*, Oct. 19, 1987).

At Textron Inc., Providence, R.I., Richard A. Watson, president of Textron Investment Management Co., and vice president of the parent corporation, noted the $2.126 billion defined benefit fund made several equity allocation changes before and after the crash. But he said, "We're doing nothing different than we always have done."

"We began in late 1986 and early 1987 to reduce equity exposure and we continued to do that right up to the crash," he said. "We made some modest increases after the crash."

As of Sept. 30, 1987, Textron had 40% in equities, but since has reduced that position to 34% as of Sept. 30 and to about 30% as of earlier this month.

"Our basic policy calls for less equity exposure than the typical fund because we are more aggressive users of real estate and private placements with equity features," he said.

With more emphasis on alternative assets, he said, "We've achieved similar returns (as funds with higher equity allocations) with lower risks."

Few, if any, of the other allocation changes were probably as favorably timed.

Martin Marietta Corp., Bethesda, Md., which already had a low equity allocation of 37% of its $2.001 billion in defined benefit assets, reported a new allocation of 20%. During the same time, it raised its cash allocation to 55% from 45% of total assets.

E.I. du Pont de Nemours & Co., Wilmington, Del., reported lower allocations to equities and longer-term fixed income by a total of 23 percentage points, putting nearly all of the proceeds into cash. The $11.57 billion fund raised its cash position 22 points, to 32% from 10%, the largest increase among the Top 200 funds. Equity exposure now is 47% vs. 57% a year earlier, while bonds now are 14% vs. 25% a year earlier.

The $2.146 billion defined benefit fund of Minnesota Mining & Manufacturing Co., St. Paul, Minn., despite a 16-point drop in its equity allocation, still keeps a relatively large equity position, at 51%. FPL Group Inc., Miami, parent of Florida Power & Light Co., maintains an even larger equity position, at 65% of its $1.231 billion in assets, even though it reported an 11-point drop.

Southwestern Bell Corp., St. Louis, reported its equity position dipped by 9 points to 53% from 62% of assets after the October crash. But Mary Ann Devine, director-investments and administration, said the change "was based on an actuarial study to add to a dedicated bond portfolio and not based on the market crash."

"We're in (the stock market) for the long term," she added. "It's very difficult to make snap decisions. You can't easily move a lot of money out of equities. Where are you going to move it? That's the reason you have asset allocation. When one's down the other is up, you have other asset classes that carry you through."

Southwestern Bell had $6.086 billion in defined benefit assets as of Sept. 30.

Among the funds increasing their equity positions, the co-leaders are the $1.985 billion fund at Owens-Illinois Inc., Toledo, Ohio, and the $1.343 billion Baltimore City Employees Retirement System, both increasing their allocations by 12 percentage points. But Owens-Illinois is decidedly the more bullish, raising its equity position to 67% of assets from 55%. The 67% ranks Owens-Illinois as having the seventh highest equity allocation among the Top 200 as of Sept. 30. Baltimore's increase raised its allocation to 41% from 29%.

Three funds raised their posi-

Continued on page 63

Buy-outs remain hot investment among Top 200

By Andrew Reinbach

Major pension funds continued their plunge into leveraged buy-outs during the year ended Sept. 30, while statistics regarding private placement investments presented no clear trend.

Of the nation's Top 200 pension funds, 13 funds — eight corporate and five public — had increased their investments in leveraged buy-outs to $2.282 billion as of Sept. 30, up 79.5% from the $1.271 billion those funds had reported a year earlier.

In addition, six funds — four corporate and two public — made their first ventures into leveraged buy-outs, with total investments of $155 million.

Three funds reported no change in allocations, while one — the Washington State Investment Board, Olympia — reduced its leveraged buy-out investments to $808 million from $990 million.

As of Sept. 30, 23 of the Top 200 funds had a total of $3.471 billion invested in leveraged buy-outs, compared with $3.678 billion from 22 funds a year earlier. The 1988 data, however, reflects only defined benefit assets, while the previous year's totals include defined contribution assets.

On the private placement front, no clear pattern of activity emerges.

Among the Top 200 funds, 14 funds — nine of them corporate — reported first-time private placement investments totaling $2.543 billion as of Sept. 30, while another 14 funds increased their positions a total of $903 million, or almost 14%, to $6.243 billion from $5.478 billion a year earlier. Yet, 18 funds reduced their private placement portfolios a total of $975 million, or 31%, to $2.166 billion from $3.141 billion the previous year.

Five funds reported no change in their private placement portfolios from year to year.

As of Sept. 30, 52 of the Top 200 funds had private placement investments totaling $11.329 billion, compared with $19.902 billion from 44 funds the previous year. Again, the 1988 data reflect only defined benefit assets.

A sampling of leveraged buy-out investors by *Pensions & Investment Age* showed those funds that increased their investments did so for purely financial reasons, and did not agonize at any great length on the possible social and political ramifications noted by critics of leveraged buy-outs.

Some of the allegedly negative results of leveraged buy-outs include the possible loss of jobs and tax revenue as well as the question of whether the great sums of money and debt loads associated with leveraged buy-outs are a wise deployment of national assets.

"Our first priority is to make money for our retirees," said Robert T. Bowman, Michigan's state treasurer. "Should I stop buying Treasury bills because it raises interest rates and cuts production of cars?"

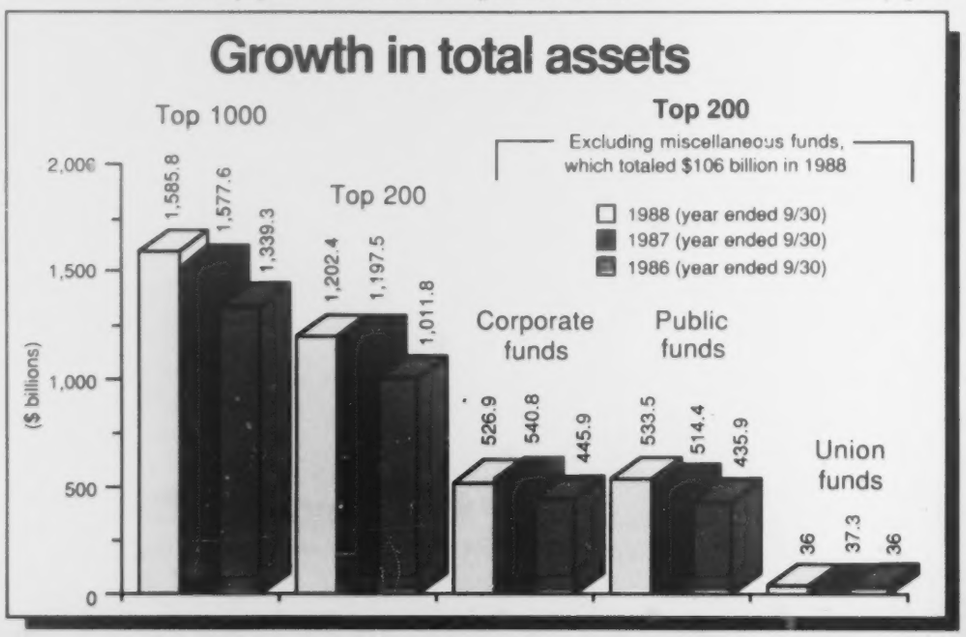
Mr. Bowman also said Kohlberg Kravis Roberts & Co., New York, has promised officials of the $15.798 billion State of Michigan Employees Retirement System, Lansing, the firm will act as a white knight "if someone comes along to buy a Michigan company. In that sense, we're producing jobs."

The Michigan fund had $148 million in leveraged buy-out investments as of Sept. 30, compared with $110 million the previous year.

Marvin L. Damsma, director of pension fund administration for the $2.214 billion defined benefit fund of Amoco Corp., Chicago, agreed with Mr. Bowman and took the thought a step further. "It's not clear who's been hurt in these deals, or who's been helped, for that matter," he said. "These are companies that would've gone through that process anyway."

Amoco had $76 million in leveraged buy-out investments as of Sept. 30, a figure Mr. Damsma

Continued on page 63



Funds keeping options open

Diversified managers most popular

By Trudy Ring

Investment firms that offer a wide variety of strategies and large index fund or core managers are those used most frequently by the Top 200 pension funds.

The top manager overall, with 58 mentions by the Top 200, was J.P. Morgan Investment Management Inc., New York. The firm is prominent in several asset classes, as is the runner-up, Prudential Asset Management Group, Newark, N.J., which was mentioned 56 times.

Wells Fargo Investment Advisors, San Francisco, the largest index fund manager, was noted 53 times, as was Trust Co. of the West, Los Angeles, another firm that runs assets in several classes. Equitable Capital Management Corp./Equitable Real Estate Investment Management Inc., New York, placed fifth with 45 mentions.

Pensions & Investment Age asked the Top 200 funds to list the managers they use for their defined benefit assets. If they use a manager for more than one assignment, each assignment counted in the manager's overall total. The leading managers in the stock and bond categories, however, reflect the number of Top 200 funds using the firm.

In some cases, pension sponsors declined to list their managers and *P&I Age* had to get the data from other sources, such as the 1989 Money Market Directory. These manager listings did not count toward each firm's total.

Most of the managers that ranked high in this survey also did so in the previous year. There was some shifting within the rankings and some slight change in the number of accounts listed for each manager. These shifts, however, could be due to the fact that MMD listings were not counted, as they were last year, and the fact some pension funds moved into or out of the Top 200.

The listing of the top overall, bond and equity managers really yielded no surprises, a consultant said when asked to interpret the data. "If you had told a group of us that you had this data and asked us to write down what names we thought you had, I think most of us would have written down the vast majority of these names," said Sandy Lincoln, managing director of William M. Mercer Meidinger Hansen Inc., Deerfield, Ill.

Most of the top equity and bond managers, he said, either are indexers or "core" managers, which take an active approach but still give broad market exposure. Some of the top overall managers have carved out a niche in specialty areas, such as real estate, he added.

There are no boutiques among the top listings, but there are some firms that have grown from boutique status, such as Criterion Investment Management Co., Houston, and Miller, Anderson & Sherrerd, Bala Cynwyd, Pa., Mr. Lincoln said.

J.P. Morgan, as well as being the top manager overall, was the top fixed-income manager, used by 24 funds in the Top 200. A spokeswoman attributed the firm's overall popularity to the breadth of investment products it offers. In fixed income, she said, a broad market view also has helped, as have consistently above-average returns.

An active fixed-income manager, J.P. Morgan also may be termed a core manager because of this breadth, she said. The firm does no bond indexing; it is prominent in immunization, but its active business is bigger, she said.

Pacific Investment Management Co., Newport Beach, Calif., ranked second among bond managers with 21 accounts. The firm is quantitatively oriented and was one of the first big users of fixed-income futures. PIMCO does not do much indexing, but rather makes modest shifts in portfolio duration and some bets on sectors and quality in the bond market.

"We're a firm that is fairly active, but active across a broad frontier," said William Gross, managing director.

Ranking next, with 12 fixed-income accounts each, were Criterion, an active manager that makes much use of proprietary computer technology, and Loomis, Sayles & Co., Boston, whose decentralized approach results in a wide variety of styles among its regional offices.

Following with 11 accounts each were State Street Bank and Trust Co., Boston, a major manager of index funds and quantitative strategies, and Miller, Anderson & Sherrerd, an active manager using sector analysis.

Wells Fargo, in addition to its high ranking overall, was the top equity manager, with 28 clients among the Top 200 funds. The firm also ranked in the top 10 for bonds, with 10 accounts.

The popularity of indexing and other structured investment styles has enhanced Wells Fargo's position, said Frederick L.A. Grauer, chairman. "I believe that the market share of traditional investment styles is decreasing," he said.

The second most popular equity manager, Alliance Capital Management Corp., New York, has seen most of its growth in indexing, although it also offers active management, said Dave Williams, chairman. Alliance was used by 26 funds.

The next firm on the list, however, Capital Guardian Trust Co., Los Angeles, is a value-oriented, bottom-up manager, with a focus on fundamental research, just the opposite of indexed and structured strategies. "Obviously, we do not believe the market is completely efficient," said Robert Kirby, chairman.

Still, both Capital Guardian and INVESCO Capital Management, Atlanta, a Graham and Dodd stock picker, fit the description of core managers, so their presence on the list is not really a surprise, Mr. Lincoln said.

Both Capital Guardian and INVESCO had 18 clients among the Top 200 funds.

Rounding out the top five equity managers is Bankers Trust Co. — Investment Management Group, New York, which is prominent in indexing and quantitative strategies. The firm was used by 17 funds.

The three firms that joined J.P. Morgan and Wells Fargo in the top five overall list did not place that high in either bonds or equities. They all, however, offer strategies in several asset classes and had numerous mentions for real estate.

"We have 17 separate investment management units and over 47 different styles of management," said Jim Blanchard, senior vice president of Prudential Asset Management. "Given that, we probably satisfy one or two or three needs in anybody's portfolio."

He added some of the units do not bear the Prudential name and therefore wouldn't be included in the total in *P&I Age's* listing, but still add to the firm's market share.

Prudential Asset Management's 56 accounts, 27 were for real estate.

TCW had 19 of its 53 accounts

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Top managers overall

	Times mentioned
J.P. Morgan	58
Prudential	56
Wells Fargo	53
TCW	53
Equitable	45
State Street Bank	40
Capital Guardian	39
Mellon*	39
Alliance	38
Aetna	37

*Includes all mentioned subsidiaries of Mellon Bank

Top equity managers

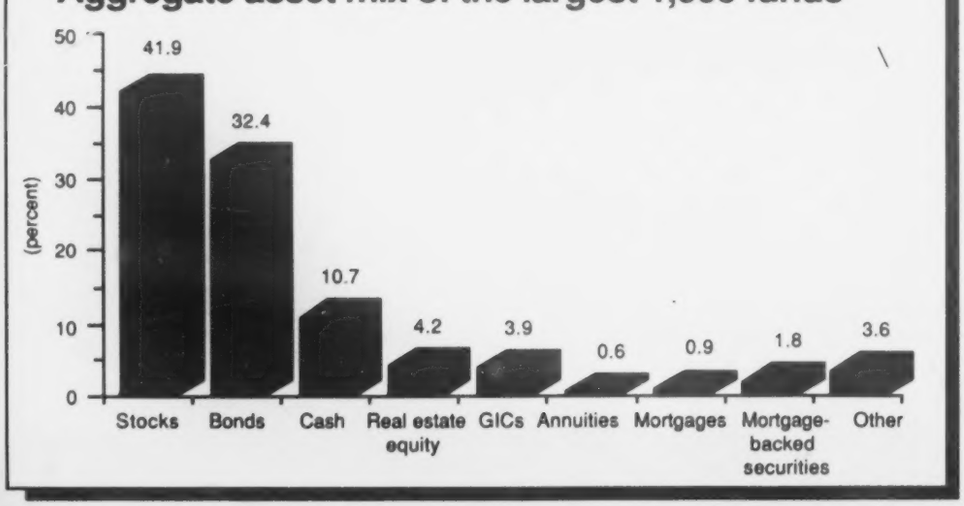
	No. funds using
Wells Fargo	28
Alliance	26
Capital Guardian	18
INVESCO	18
Bankers Trust	17
Delaware	15
Trinity	15
RCM	15
TCW	13
Loomis Sayles	13
Lazard Freres	13
Oppenheimer	13
Fayez Sarofim	13
Jennison	13

Top bond managers

	No. funds using
J.P. Morgan	24
PIMCO	21
Loomis Sayles	12
Criterion	12
State Street Bank	11
Miller Anderson Sherrerd	11
Wells Fargo	10
Lincoln	10
Mellon*	9
Putnam	8
Lehman	8

*Includes all mentioned subsidiaries of Mellon Bank

Aggregate asset mix of the largest 1,000 funds



Profile statistics at a glance

($ billions)

	1988	1987
Top 1,000 assets	1,585.8	1,577.6
Top 200 assets	1,202.4	1,197.5
Top 100 assets	1,004.1	1,002.4
Top 50 assets	791.8	794.2
Top 25 assets	581.9	582.0
Top 200 defined benefit	972.8	984.9
Top 200 defined contribution	112.7	104.2
Top 200 profit-sharing	11.8	19.1
Top 200 thrift/401(k)	80.9	67.6

Top 200 fund statistics*

	1988	1987
Internal management**	426.7	475.8
Internally managed equities	139.6	192.6
Internally managed fixed	198.8	206.2
Internally managed short-term	37.7	38.6
Internally managed other	31.9	25.8
Stock index funds	114.3	141.3
Internally managed indexed equities	41.3	63
Bond index funds	40.8	45
Internally managed indexed fixed	2.3	2.7
Real estate equity	35.3	28.0
Mortgages	18.8	31.2
Mortgage-backed securities	50	49.9
GICs	8	8.8
Overseas	27.6	31.9
Overseas - equity	21	26.3
Overseas - fixed	5.8	4.5
Overseas - other	0.8	1.1
Venture capital	3.9	2.9
Dedication/immunization	26.4	24.6
Oil & gas	0.7	1.3
LBOs	3.5	3.7
Private placements	11.3	19.6
Contributions paid	39.2	40.1
Benefits paid	42	38.2

Number of Top 200 funds using alternative investments*

	1988	1987
Internal management	116	125
Stock index funds	105	105
Bond index funds	44	41
Real estate equity	128	134
Mortgages	61	60
Mortgage-backed securities	78	86
GICs	44	48
Overseas	87	94
Venture capital	65	72
Dedication/immunization	31	27
Oil & gas	21	22
LBOs	23	22
Private placements	52	44
Stock index futures	67	72
Fixed-income futures	50	46
Stock options	59	65
Fixed-income options	25	19

* Based on defined benefit assets only

** Total is greater because some funds did not break out assets

Termination waves ebb for PBGC

By Joel Chernoff

WASHINGTON — After experiencing wave upon wave of terminations of underfunded pension plans through the 1980s, life finally started quieting down at the Pension Benefit Guaranty Corp. last year.

Despite contentious litigation with The LTV Corp. over responsibility for the funding of some of LTV's pension liabilities, the big terminations stopped coming.

Thus, the agency kept its deficit at less than $2 billion — although that figure would more than double if a federal court forces the PBGC to take back the three troubled LTV funds, which the agency has tried to return to the Dallas-based steel and aerospace manufacturer.

Aided by a 1987 law that raised premiums paid to the agency by employers with single-employer defined benefit plans, the PBGC now can claim a positive cash flow. The situation is better "because our premium flow is better than our benefit payments," said Kathleen Utgoff, PBGC executive director.

Projections for amortizing the deficit could be upset easily. More big claims could come in, or high inflation could drive up the agency's maximum benefit guarantees, thus increasing liabilities.

Ms. Utgoff, however, is hopeful that pension reforms — including tougher funding rules that she helped drive through Congress — have alleviated those problems.

In terms of the management of the agency's $2.5 billion in assets, few changes were made in the 12 months ended Sept. 30.

Lou Faircloth was named manager-investment management division in October 1988, succeeding Julie Shriver who had left 10 months previously to become an investment officer for the International Monetary Fund staff retirement fund. The PBGC expects to hire another investment professional by early spring.

The agency's equity management farm team, now in place for two years, remained the same: Disciplined Investment Advisors Inc., Evanston, Ill.; Furman Selz Capital Management Inc., New York; Loomis, Sayles & Co. Inc., Pasadena, Calif.; and Nelson, Benson & Zellmer Inc., Denver.

The agency's other equity managers are: American National Bank & Trust Co., Chicago; Chase Investors Management Corp., New York; Dimensional Fund Advisors, Santa Monica, Calif.; Lazard Freres Asset Management, New York; Lehman Management Co., New York; McCowan Associates Inc., New York; State Street Bank and Trust Co., Boston; and United Capital Management, Denver.

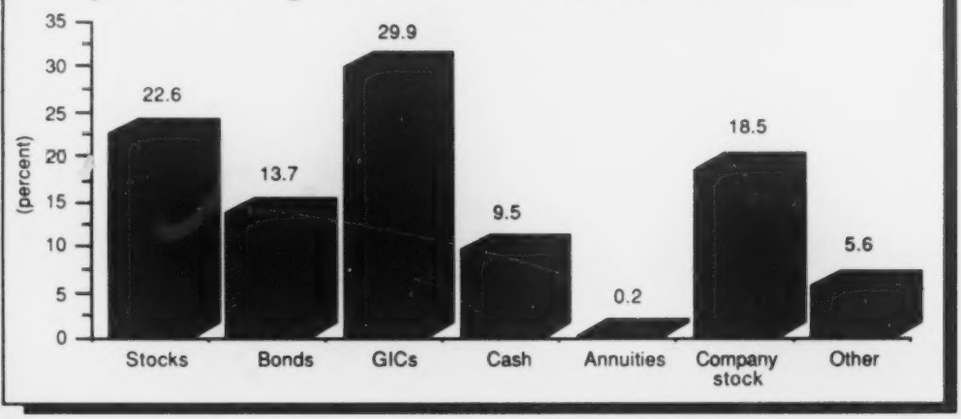
Bond managers are Morgan Stanley Asset Management, New York, and Pacific Investment Management Co., Newport Beach, Calif.

Mellon Bond Associates, Pittsburgh, was dropped as an investment manager.

State Street Bank is master custodian; Manufacturers Hanover Trust Co., New York, is master custodian of the farm team's assets.

For the embattled LTV pension assets, valued at about $1 billion, managers are Scudder, Stevens & Clark, New York, for fixed income; and Karsten Realty Advisors, Los Angeles, for real estate. Mellon Bank, Pittsburgh, is the custodian for the LTV assets. ■

Top 200 average defined contribution asset mix



How information was gathered

The information on employee benefit funds contained in this issue was compiled in several steps.

Questionnaires were sent to more than 1,500 funds in *Pensions & Investment Age*'s data base. The largest 200 and largest 1,000 were identified from the completed questionnaires, follow-up telephone calls and a cross-check with information supplied by Money Market Directories Inc., Charlottesville, Va., publisher of the 1989 Money Market Directory of Pension Funds and Their Investment Managers.

The more detailed information contained in the profiles of the Top 200 employee benefit funds was obtained from the completed questionnaires and from interviews with fund officials by the editorial staff of *P&I Age*.

Where no information was available from the fund, statistics were taken from the 1989 Money Market Directory.

Unless otherwise noted, the data reflect fund operations as of Sept. 30, 1988.

In cases where the fund supplied information considered too dated, *P&I Age* estimated the asset growth based on one of the following methods: the asset mix the fund supplied for the previous year's survey; the asset mix reported in the 1989 Money Market Directory; or *P&I Age*'s reported average asset mix for that particular type of fund, i.e., union, corporate or public.

In the tables accompanying the profiles, all figures except for defined contribution plans are based on defined benefit assets. Dollar amounts in all charts were rounded to the nearest million.

The asset mixes for the Top 200 and Bottom 800 funds represent the average of all reported defined benefit mixes for the respective funds. The separate asset mixes for the components of the Top 200 and Bottom 800 universes — corporate, public and union funds — were compiled in the same manner.

For the first time this year, Top 200 fund sponsors were surveyed on the asset mix of their defined contribution plans.

This is the 10th consecutive year *P&I Age* has ranked the nations 1,000 largest employee benefit funds and the eighth year separate listings have appeared for the Top 200. ■

Top 200 defined benefit asset mix

Corporate

	1988	1987
Stocks	48.6%	54.5%
Bonds	29.8	23.9
Cash	9	8.2
Real estate equity	5.1	4.2
Mortgages	0.3	0.6
Mortgage-backed securities	1.6	0.9
GICs	2.4	3.6
Annuities	1.2	1.7
Other*	2	2.4

Public

	1988	1987
Stocks	35.2%	39 %
Bonds	41.4	40.3
Cash	9.7	8.2
Real estate equity	3.4	2.5
Mortgages	2.4	2.2
Mortgage-backed securities	6.2	6.6
GICs	0.5	0.4
Annuities	0	0
Other*	1.2	0.8

Union

	1988	1987
Stocks	34.6%	38 %
Bonds	45.4	39
Cash	8.8	10.1
Real estate equity	3.4	3.9
Mortgages	2.1	1.7
Mortgage-backed securities	1	1.7
GICs	2.2	1.8
Annuities	2	2.4
Other*	0.5	1.4

*Other includes venture capital, oil and gas and miscellaneous investments

Bottom 800 defined benefit asset mix

Aggregate

	1988	1987
Stocks	41.7 %	44.4%
Bonds	31.5	29.8
Cash	11.3	10.4
Real estate equity	4.1	3
Mortgages	0.8	1.3
Mortgage-backed securities	1.3	2.1
GICs	4.9	3.5
International	2.1	2.4
Annuities	0.6	1.2
Venture capital	0.4	0.5
Oil & gas	0.04	0
LBOs	0.03	0
Private placements	0.1	0.3
Other	1.13	1.1

Corporate

	1988	1987
Stocks	46.3 %	50.8%
Bonds	26.1	23.2
Cash	11.4	10.4
Real estate equity	4.1	3.1
Mortgages	0.3	0.4
Mortgage-backed securities	0.5	0.8
GICs	5.8	4.9
International	2.9	3.1
Annuities	0.8	1.6
Venture capital	0.6	0.6
Oil & gas	0.06	0.1
LBOs	0.05	0
Private placements	0.1	0
Other	0.99	0.7

Public

	1988	1987
Stocks	36.5 %	48.2%
Bonds	41.9	26.3
Cash	10.7	10.5
Real estate equity	4	3
Mortgages	0.9	0.9
Mortgage-backed securities	2.5	1.3
GICs	0.9	4
International	1	2.9
Annuities	0.3	1.3
Venture capital	0.2	0.6
Oil & gas	0.01	0
LBOs	0	0
Private placements	0.01	0.3
Other	1.08	0.7

Union

	1988	1987
Stocks	29.9 %	31 %
Bonds	36.7	39.2
Cash	12	9.5
Real estate equity	4.7	3.5
Mortgages	2.6	2.2
Mortgage-backed securities	3.1	4.8
GICs	8.1	3.7
International	0.3	0.4
Annuities	0.06	1.5
Venture capital	0.1	0.1
Oil & gas	0.02	0
LBOs	0	0
Private placements	0.2	0.5
Other	2.22	3.6

Top 200 pension funds/sponsors

Assets in $ millions

1.	TIAA-CREF	67,141
2.	California Public Employees	45,940
3.	New York State & Local	37,918
4.	General Motors	37,600
5.	New York City Systems	35,537
6.	AT&T	35,143
7.	General Electric	25,300
8.	California State Teachers	24,721
9.	New York State Teachers	22,779
10.	IBM	21,761
11.	N.J. Division of Investment	20,092
12.	Ford Motor	19,650
13.	Texas Teachers	19,439
14.	E.I. du Pont de Nemours	16,489
15.	Wisconsin Investment Board	16,419
16.	Ohio Public Employees	16,408
17.	State of Michigan	15,798
18.	Ohio State Teachers	15,348
19.	Florida State Board	14,411
20.	North Carolina Systems	13,800
21.	NYNEX	13,401
22.	Pennsylvania Public Schools	12,999
23.	Ameritech	12,100
24.	Washington State Board	10,867
25.	Bell Atlantic	10,816
26.	GTE	10,596
27.	BellSouth	10,505
28.	Minnesota State Board	10,207
29.	University of California	10,123
30.	Pacific Telesis	9,639
31.	USX	8,860
32.	Oregon Public Employes	8,800
33.	Los Angeles County	8,744
34.	Maryland State Retirement	8,717
35.	Rockwell International	8,583
36.	Boeing	8,476
37.	Teamsters, Central States	8,469
38.	U S WEST	8,133
39.	Virginia Supplemental	8,041
40.	Teamsters, Western Conference	8,000
41.	Pennsylvania State Employes	7,967
42.	Eastman Kodak	7,825
43.	Exxon	7,609
44.	Colorado Public Employees	7,591
45.	Georgia Teachers Retirement	7,525
46.	Sears, Roebuck	7,176
47.	United Nations Joint Staff	7,146
48.	Lockheed	7,113
49.	Illinois Teachers	7,043
50.	Alabama Retirement Systems	7,000
51.	United Technologies	7,000
52.	Southwestern Bell	6,961
53.	Shell Oil	6,686
54.	Tennessee Consolidated	6,643
55.	Allied-Signal	6,609
56.	McDonnell Douglas	6,462
57.	Arizona State Retirement	6,429
58.	Connecticut Trust Funds	6,236
59.	South Carolina Retirement	6,009
60.	Chevron	5,460
61.	Prudential Insurance	5,276
62.	Hughes Aircraft	5,136
63.	Texas Employees	5,108
64.	General Dynamics	5,000
65.	Westinghouse Electric	4,800
66.	UMWA	4,700
67.	Missouri Public School	4,500
68.	Philip Morris	4,500
69.	Chrysler	4,414
70.	Unisys	4,281
71.	Caterpillar	4,138
72.	Amoco	4,014
73.	Mass. Teachers & Employees	4,000
74.	Monsanto	3,990
75.	Mobil Oil	3,880
76.	Iowa Public Employees	3,800
77.	Illinois Municipal Retirement	3,591
78.	Hawaii State Employees	3,495
79.	Alaska Retirement Systems	3,476
80.	RJR Nabisco	3,387
81.	Mississippi Public Employees	3,336
82.	San Francisco Employees	3,322
83.	UAL	3,300
84.	Pacific Gas & Electric	3,299
85.	Delta Air Lines	3,296
86.	Detroit Retirement Systems	3,291
87.	Utah State Retirement	3,205
88.	Kansas Public Employees	3,175
89.	Metropolitan Life	3,120
90.	Procter & Gamble	3,102
91.	American Airlines	3,100
92.	Illinois State Universities	3,080
93.	Nat'l Electrical Contractors/IBEW	3,045
94.	Chicago Teachers	2,981
95.	Northrop	2,979
96.	Atlantic Richfield	2,977
97.	Georgia Employees	2,945
98.	Indiana Public Employees	2,927
99.	Dow Chemical	2,924
100.	United Methodist Church	2,903
101.	Aluminum Co. of America	2,892
102.	Kentucky Teachers	2,840
103.	Louisiana Teachers	2,833
104.	Martin Marietta	2,829
105.	Grumman	2,810
106.	Textron	2,792
107.	Los Angeles Fire & Police	2,774
108.	Texaco	2,772
109.	Xerox	2,724
110.	Bethlehem Steel	2,722
111.	Minnesota Mining & Mfg.	2,703
112.	Illinois Board of Investment	2,700
113.	World Bank	2,687
114.	Nevada Public Employees	2,682
115.	J.C. Penney	2,663
116.	Ohio Police & Firemen	2,614
117.	ITT	2,611
118.	State Farm Insurance	2,601
119.	Southern Co. Services	2,600
120.	Consolidated Edison	2,549
121.	Tenneco	2,542
122.	Honeywell	2,539
123.	Kentucky Retirement	2,500
124.	Tennessee Valley Authority	2,500
125.	Raytheon	2,430
126.	Ohio School Employees	2,418
127.	Massachusetts PRIM	2,364
128.	Deere	2,300
129.	Owens-Illinois	2,286
130.	Federal Retirement Thrift Board	2,271
131.	International Paper	2,252
132.	Aetna Life & Casualty	2,242
133.	Southern Baptist Convention	2,223
134.	Los Angeles City	2,193
135.	Boilermaker Blacksmith	2,128
136.	Southern California Edison	2,104
137.	Trans World Airlines	2,104
138.	TRW	2,054
139.	Eastern Air Lines	2,041
140.	Louisiana State Retirement	2,001
141.	Presbyterian Church (USA)	2,000
142.	Sun	1,987
143.	National Rural Electric Cooperative	1,982
144.	Halliburton	1,965
145.	Rhode Island Retirement	1,911
146.	Armco	1,889
147.	Hospital & Healthcare Workers	1,888
148.	BP America	1,883
149.	Eli Lilly	1,867
150.	Commonwealth Edison	1,861
151.	Bakery & Confectionery Union	1,849
152.	International Operating Engineers	1,832
153.	Travelers Insurance	1,830
154.	Arkansas Teachers	1,827
155.	Federated Department Stores	1,810
156.	FPL Group	1,803
157.	Oklahoma Teachers	1,800
158.	Texas Municipal Retirement	1,800
159.	Texas County & District	1,789
160.	Navistar	1,785
161.	New Mexico Educational Board	1,750
162.	Goodyear Tire & Rubber	1,728
163.	Union Carbide	1,711
164.	Inland Steel Industries	1,700
165.	Phillips Petroleum	1,700
166.	GenCorp	1,683
167.	PPG Industries	1,677
168.	Plumbers, National Headquarters	1,658
169.	Southern New England Telephone	1,625
170.	American Stores	1,623
171.	Motorola	1,618
172.	Kraft	1,608
173.	Hewlett-Packard	1,606
174.	Chicago Municipal Employees	1,600
175.	Hercules	1,589
176.	Philadelphia Municipal	1,578
177.	American Electric Power	1,561
178.	Abbott Laboratories	1,530
179.	New Mexico Public Employees	1,513
180.	K mart	1,509
181.	Los Angeles Water & Power	1,504
182.	Indiana State Teachers	1,500
183.	New York Life	1,500
184.	Episcopal Church Pension	1,470
185.	Southern California UFCW	1,464
186.	Houston Retirement System	1,458
187.	CIGNA	1,454
188.	Maine State Retirement	1,452
189.	United Parcel Service	1,443
190.	IAM National Pension Fund	1,438
191.	Evangelical Lutheran Church	1,420
192.	Bechtel Power	1,417
193.	Sheet Metal Workers	1,408
194.	Digital Equipment	1,398
195.	Milwaukee City Employes	1,397
196.	Army & Air Force Exchange	1,386
197.	Texas Instruments	1,379
198.	State of Delaware	1,369
199.	Baltimore City	1,343
200.	NCR	1,343
	Total	**1,202,411**

Ranking of funds/sponsors 201 - 1,000

Assets in $ millions

Rank	Fund/sponsor	Location	Assets
201.	American Brands	Old Grnwich, Conn.	1,342
202.	Idaho Public Employees	Boise	1,335
203.	West Virginia Board	Charleston	1,325
204.	Kaiser Permanente	Oakland, Calif	1,323
205.	Montana Combined	Helena	1,319
206.	Okla. Public Employees	Oklahoma City	1,318
207.	Teledyne	Los Angeles	1,310
208.	Johnson & Johnson	New Brunswick, N.J.	1,300
209.	North American Philips	New York	1,283
210.	N. Calif. Retail Clerks	Walnut Creek	1,281
211.	Chicago Police	Chicago	1,278
212.	New England Teamsters	Boston	1,265
213.	Pan Am World Airways	New York	1,240
214.	American Bar Assoc.	Chicago	1,234
215.	American Cyanamid	Wayne, N.J.	1,232
216.	Unocal	Los Angeles	1,232
217.	Nat'l Auto Dealers	McLean, Va.	1,222
218.	John Hancock	Boston	1,221
219.	Merck	Rahway, N.J.	1,219
220.	Pacific Enterprises	Los Angeles	1,215
221.	BATUS	Louisville, Ky.	1,212
222.	S. Dakota Retirement	Pierre	1,207
223.	Wyoming Retirement	Cheyenne	1,206
224.	Arizona Public Safety	Phoenix	1,200
225.	Arkansas Public	Little Rock	1,200
226.	Michigan Municipal	Lansing	1,200
227.	Warner Lambert	Morris Plains, N.J.	1,200
228.	Champion Int'l	Stamford, Conn.	1,186
229.	Financial Institutions	New York	1,181
230.	James River	Richmond, Va.	1,174
231.	Emerson Electric	St. Louis	1,173
232.	Philadelphia Electric	Philadelphia	1,170
233.	Ethyl	Richmond, Va.	1,165
234.	Op. Eng. 12	Pasadena, Calif.	1,162
235.	Cook County	Chicago	1,155
236.	Northwest Airlines	St. Paul, Minn.	1,153
237.	N. Calif. Carpenters	Oakland	1,152
238.	Burlington Northern	Seattle	1,150
239.	United Telecom	Kansas City, Mo.	1,146
240.	Sandia Nat'l Labs	Albuquerque, N.M.	1,145
241.	District of Columbia	Washington	1,144
242.	Litton Industries	Beverly Hills, Calif.	1,138
243.	Nat'l Intergroup	Pittsburgh	1,137
244.	Mo. State Employees	Jefferson City	1,130
245.	Op. Eng. 302-612	Seattle	1,128
246.	Orange County	Santa Ana, Calif.	1,127
247.	Ladies Garment Wrkrs.	New York	1,126
248.	Dun & Bradstreet	New York	1,123
249.	Hallmark Cards	Kansas City, Mo.	1,123
250.	LTV	Dallas	1,121
251.	Upjohn	Kalamazoo, Mich.	1,113
252.	ICMA Retirement	Washington	1,107
253.	Duke Power	Charlotte, N.C.	1,106
254.	Cooper Industries	Houston	1,100
255.	Kiewit Continental	Norwalk, Conn.	1,100
256.	Kimberly-Clark	Dallas	1,100
257.	McDermott	New Orleans	1,100
258.	Pfizer	New York	1,100
259.	Santa Fe	Chicago	1,100
260.	Colgate-Palmolive	New York	1,086
261.	Texas Utilities	Dallas	1,084
262.	Int'l Monetary Fund	Washington	1,079
263.	Anheuser-Busch	St. Louis	1,065
264.	Rohm & Haas	Philadelphia	1,060
265.	Westvaco	New York	1,051
266.	Bristol-Myers	New York	1,044
267.	SmithKline Beckman	Philadelphia	1,030
268.	Niagara Mohawk Power	Syracuse, N.Y.	1,029
269.	N.H. Retirement	Concord	1,027
270.	MEBA	Baltimore	1,025
271.	Nebraska State	Lincoln	1,020
272.	General Public Utilities	Parsippany, N.J.	1,013
273.	Joint Industry/IBEW 3	Flushing, N.Y.	1,009
274.	American Standard	New York	1,008
275.	Citicorp	New York	1,006
276.	Times Mirror	Los Angeles	1,000
277.	Corning Glass Works	Corning, N.Y.	991
278.	Montgomery Ward	Chicago	987
279.	Deseret Mutual	Salt Lake City	986
280.	FMC	Chicago	985
281.	S. Calif. Carpenters	Los Angeles	981
282.	Manufacturers Hanover	New York	974
283.	CBS	New York	967
284.	Eaton	Eden Prairie, Minn.	960
285.	Scott Paper	Philadelphia	960
286.	Public Service & Electric	Newark, N.J.	956
287.	Cummins Engine	Columbus, Ohio	955
288.	CIBA-GEIGY	Ardsley, N.Y.	947
289.	W.R. Grace	New York	947
290.	Union Pacific	New York	946
291.	Carpenters, Dist. Coun.	New York	945
292.	Whirlpool	Benton Harbor, Mich.	945
293.	Carteret Publishing	Morehead City, N.C.	940
294.	Ralston Purina	St. Louis	939
295.	Ashland Oil	Ashland, Ky.	937
296.	Columbia Gas System	Wilmington, Del.	928
297.	Safeway Stores	Oakland, Calif.	925
298.	Armstrong World	Lancaster, Pa.	923
299.	Boise Cascade	Boise, Idaho	922
300.	Schlumberger	New York	922
301.	Olin	Stamford, Conn.	912
302.	Triangle Industries	W. Palm Beach, Cal.	908
303.	San Diego County	San Diego	905
304.	Middle South Utilities	New Orleans	900
305.	Georgia-Pacific	Atlanta	898
306.	Detroit Edison	Detroit	888
307.	Mass. Institute of Tech.	Cambridge	888
308.	Hoffmann-LaRoche	Nutley, N.J.	886
309.	BASF	Parsippany, N.J.	882
310.	PepsiCo	Purchase, N.Y.	880
311.	Northeast Utilities	Berlin, Conn.	875
312.	YMCA	New York	870
313.	General Mills	Minneapolis	862
314.	Occidental Petroleum	Los Angeles	853
315.	R.R. Donnelley	Chicago	850
316.	Chicago Transit	Chicago	834
317.	Aramco Services	Houston	825
318.	Dana	Toledo, Ohio	820
319.	Electro Rent	Culver City, Calif.	820
320.	Contel	Atlanta	815
321.	Manville	Denver	815
322.	Northern States Power	Minneapolis	809
323.	Consol. Natural Gas	Pittsburgh	808
324.	Laborers Nat'l Pension	Dallas	800
325.	U.S. Air	Washington	800
326.	CSX	Richmond, Va.	799
327.	Marsh & McLennan	New York	798
328.	Consumers Power	Jackson, Mich.	794
329.	Motion Picture Industry	Studio City, Calif.	793
330.	Weyerhaeuser	Tacoma, Wash.	790
331.	Ingersoll-Rand	Woodcliff Lake, N.J.	789
332.	Norfolk Southern	Norfolk, Va.	789
333.	Quaker Oats	Chicago	787
334.	Reynolds Metals	Richmond, Va.	786
335.	Hanson Industries	Iselin, N.J.	785
336.	United Church Board	New York	780
337.	Consolidated Rail	Philadelphia	779
338.	Combustion Engineering	Stamford, Conn.	775
339.	Kellogg	Battle Creek, Mich.	771
340.	May Department Stores	St. Louis	770
341.	City of Cincinnati	Cincinnati	756
342.	Lutheran Church-Mo.	St. Louis	755
343.	Continental Resources	Bedford, Mass.	751
344.	Minneapolis Employees	Minneapolis	751
345.	Coca-Cola	Atlanta	750
346.	Fluor	Irvine, Calif.	750
347.	Singer	Stamford, Conn.	748
348.	Colt Industries	New York	747
349.	Baxter Int'l	Deerfield, Ill.	746
350.	Amer. Nat'l Red Cross	Alexandria, Va.	740
351.	Centenor	Cleveland	740
352.	Alameda County	Oakland, Calif.	739
353.	Sara Lee	Chicago	738
354.	Cincinnati Bell	Cincinnati	736
355.	Pillsbury	Minneapolis	735
356.	Painters Int'l	Washington	734
357.	Jeff.-Smurfit/Container	St. Louis	730
358.	San Diego City	San Diego	728
359.	Retail 1199	New York	726
360.	Denver Public Schools	Denver	725
361.	Polaroid	Cambridge, Mass.	725
362.	Michigan Civil Service	Lansing	715
363.	Southland	Dallas	715
364.	Liberty Mutual	Boston	711
365.	Winn Dixie Stores	Jacksonville, Fla.	711
366.	Bayer USA	Pittsburgh	710
367.	San Jose City	San Jose, Calif.	710
368.	S. Bernardino County	San Bernardino, Cal.	706
369.	Central & Southwest	Dallas	700
370.	N. J. Hospital Assoc.	Princeton	700
371.	Budd	Troy, Mich.	697
372.	Amax	Greenwich, Conn.	694
373.	Control Data	Minneapolis	694
374.	Mass. Bay Transport.	Boston	693
375.	Pennsylvania P&L	Allentown	692
376.	Blue Cross/Blue Shield	Chicago	690
377.	Nat'l Automatic Sprinkler	Landover, Md.	688
378.	Borden	Columbus, Ohio	687
379.	Morton Thiokol	Chicago	686
380.	Boston City	Boston	671
381.	Milwaukee County	Milwaukee	667
382.	Goldman, Sachs	New York	666
383.	Capital Cities/ABC	New York	665
384.	Teamsters, Central Pa.	Reading	663
385.	Hoechst Celanese	Somerville, N.J.	662
386.	Arthur Andersen	Chicago	661
387.	Contra Costa County	Martinez, Calif.	659
388.	Baltimore G&E	Baltimore	654
389.	Dallas Employees	Dallas	654
390.	Bell Comm. Research	Livingston, N.J.	652
391.	Owens-Corning	Toledo, Ohio	650
392.	Dominion Resources	Richmond, Va.	649
393.	Parsons	Pasadena, Calif.	648
394.	Time	New York	645
395.	ICI Americas	Wilmington, Del.	644
396.	Mars	McLean, Va.	641
397.	Op. Eng. 3	San Francisco	640
398.	Reliance Electric	Cleveland	639
399.	Farmland Industries	Kansas City, Mo.	638
400.	Borg-Warner	Chicago	637
401.	Mead	Dayton, Ohio	633
402.	E-Systems	Dallas	631
403.	Harris	Melbourne, Fla.	629
404.	Op. Eng. 39	San Francisco	628
405.	Wayne County	Detroit	624
406.	Fairfax County	Fairfax, Va.	623
407.	Baltimore County	Baltimore	618
408.	Graphic Comm. Int'l	Washington	618
409.	Dayton Hudson	Minneapolis	617
410.	Campbell Soup	Camden, N.J.	616
411.	Squibb	Princeton, N.J.	616
412.	Burlington Industries	Greensboro, N.C.	615
413.	Peoples Energy	Chicago	614
414.	Gillette	Boston	609
415.	Food/Comm. Nat'l	Washington	604
416.	Sacramento County	Sacramento, Calif.	602
417.	General Signal	Stamford, Conn.	600
418.	White Consolidated	Cleveland	600
419.	Longshoremen, ILA	New York	599
420.	Marriott	Washington	597
421.	Op. Eng., Midwest	Countryside, Ill.	596
422.	Washington Post	Washington	592
423.	Ohio Edison	Akron	591
424.	Svc. Empl. 32B/32J	New York	586
425.	RSSI	New York	585
426.	Navy Resale System	Staten Island, N.Y.	580
427.	Sundstrand	Rockford, Ill.	579
428.	Household Int'l	Prospect Heights, Ill.	576
429.	Op. Eng., Ohio	Columbus	576
430.	Schering-Plough	Madison, N.J.	576
431.	Coastal	Houston	575
432.	Gannett	Arlington, Va.	575
433.	Carpenters, Cleveland	Cleveland	572
434.	Laborers & Retirement	Chicago	571
435.	Ameritrust	Cleveland	570
436.	Louisiana School	Baton Rouge	570
437.	Montgomery County	Rockville, Md.	570
438.	Vermont State	Montpelier	570
439.	Lear Siegler	Livingston, N.J.	569
440.	Mitre	Bedford, Mass.	569
441.	Varian Associates	Palo Alto, Calif.	564
442.	Enron	Houston	560
443.	Kaiser Aluminum	Oakland, Calif.	559
444.	AMP	Harrisburg, Pa.	558
445.	Battelle Memorial	Columbus, Ohio	558
446.	Elec. Eng. Int'l HQ	Washington	553
447.	Jacksonville City	Jacksonville, Fla.	551
448.	Brunswick	Skokie, Ill.	548
449.	Food/Comm. 27	Baltimore	548
450.	Lumber Production	Portland, Ore.	548
451.	De Luxe Check	St. Paul, Minn.	547
452.	Colorado Fire & Police	Englewood, Colo.	545
453.	Mayo Foundation	Rochester, Minn.	545
454.	Iron Workers, Calif.	San Marino	544
455.	Mo. Local Gov't	Jefferson City	543
456.	Screen Actors/Prod.	Burbank, Calif.	540
457.	Teamsters 705	Chicago	540
458.	Typographical Union	Colo. Springs, Colo.	540
459.	UFCW Atlanta	Atlanta	539
460.	Aerospace	El Segundo, Calif.	537
461.	Teamsters 710	Chicago	536
462.	Johnson Controls	Milwaukee	535
463.	Amer. Fed./Musicians	New York	534
464.	Allegheny Power	New York	525
465.	Kroger	Cincinnati	525
466.	Tektronix	Beaverton, Ore.	525
467.	Panhandle Eastern	Houston	524
468.	Wickes	Santa Monica, Calif.	524
469.	CPC Int'l	Englewd. Cl., N.J.	523
470.	Union Camp	Wayne, N.J.	523
471.	Emhart	Farmington, Conn.	520
472.	Hospital Corp./America	Nashville, Tenn.	520
473.	Union Electric	St. Louis	520

Ranking of funds/sponsors 201 - 1,000

Assets in $ millions

Rank	Fund/sponsor	Location	Assets
474.	New England Electric	Westborough, Mass.	516
475.	Printing Pressman	El Monte, Calif.	514
476.	Laborers' Int'l HQ	Washington	512
477.	Wisconsin Electric	Milwaukee	511
478.	Longshore /ILWU-PMA	San Francisco	510
479.	San Diego G&E	San Diego	510
480.	Graphic Arts, 458	Chicago	507
481.	Mich. Consolidated Gas	Detroit	507
482.	B.F. Goodrich	Akron, Ohio	506
483.	Norton	Worcester, Mass.	505
484.	Laborers, S. Cal. Const.	Los Angeles	503
485.	Laborers, Chicago	Chicago	502
486.	Milliken	Spartanburg, S.C.	502
487.	Federal Express	Memphis, Tenn.	500
488.	Timken	Canton, Ohio	500
489.	Uniroyal Goodrich	Akron, Ohio	500
490.	New York State E&G	Ithaca	497
491.	Stone & Webster	New York	497
492.	Florida Progress	St. Petersburg	493
493.	Baker Hughes	Houston	488
494.	Arthur D. Little	Cambridge, Mass.	487
495.	GCIU Inter-Local	Chicago	484
496.	Maytag	Newton, Iowa	484
497.	McKesson	San Francisco	484
498.	Koppers	Pittsburgh	482
499.	Minnesota Nurses	St. Paul	482
500.	Premark	Deerfield, Ill.	481
501.	Laborers, Const. & Gen.	Forest Park, Ill.	480
502.	Amstar	Stamford, Conn.	479
503.	Major League Players	New York	479
504.	USG	Chicago	478
505.	Carolina P&L	Raleigh, N.C.	475
506.	Paper Industry Int'l	Nashville, Tenn.	474
507.	Carpenters, Chicago	Chicago	472
508.	McGraw-Hill	New York	471
509.	H.J. Heinz	Pittsburgh	468
510.	IC Industries	Chicago	466
511.	F.W. Woolworth	New York	465
512.	Peat Marwick Main	Montvale, N.J.	465
513.	Steelcase	Grand Rapids, Mich.	465
514.	Firestone Tire	Chicago	463
515.	Walgreen	Deerfield, Ill.	462
516.	Chicago Firemen	Chicago	461
517.	Quantum Chemical	New York	458
518.	Cincinnati G&E	Cincinnati	456
519.	Air Products	Allentown, Pa.	454
520.	Teamsters, Alaska	Anchorage	452
521.	Food/Comm. Nat'l	Chicago	451
522.	Carpenter Technology	Reading, Pa.	450
523.	Seattle City	Seattle	450
524.	Op. Eng. 324	Birmingham, Mich.	449
525.	Inter-Amer. Devel. Bank	Washington	448
526.	Teamster Affiliates	Washington	448
527.	Houston Industries	Houston	445
528.	Seagram & Sons	New York	445
529.	Sherwin-Williams	Cleveland	445
530.	Avon Products	New York	444
531.	Atlanta General Empl.	Atlanta	443
532.	Cleveland-Cliffs	Cleveland	442
533.	Marine Eng., Dist. 2	Brooklyn, N.Y.	441
534.	Tribune	Chicago	440
535.	Mercantile Stores	New York	439
536.	Northern Illinois Gas	Aurora	439
537.	Long Island Lighting	Hicksville, N.Y.	437
538.	R.H. Macy	New York	437
539.	Briggs & Stratton	Milwaukee	435
540.	Pennwalt	Philadelphia	435
541.	V.F.	Reading, Pa.	434
542.	Dallas Police & Fire	Dallas	433
543.	Pitney Bowes	Stamford, Conn.	433
544.	Cargill	Minneapolis	430
545.	San Mateo County	Redwood City, Calif.	430
546.	Sandoz	New York	430
547.	S. Calif. Electrical	Los Angeles	427
548.	Teamsters, N.Y. State	Utica	426
549.	Phelps Dodge	Phoenix, Ariz.	424
550.	Teamsters 282	Elmont, Calif.	424
551.	Amer. Home Products	New York	423
552.	A.O. Smith	Milwaukee	423
553.	Food/Comm., Butchers	Oakland, Calif.	423
554.	Texas Eastern	Houston	423
555.	Fresno County	Fresno, Calif.	422
556.	Teamsters, West. Pa.	Pittsburgh	421
557.	Becton Dickinson	Franklin Lakes, N.J.	419
558.	Primerica	Greenwich, Conn.	417
559.	Gulf & Western	New York	412
560.	Roadway Services	Akron, Ohio	412
561.	Seafarers	Camp Springs, Md.	410
562.	S. Calif. Rapid Transit	Los Angeles	410
563.	Johnson & Higgins	New York	409
564.	Northern Telecom	Nashville, Tenn.	409
565.	Endata	Nashville, Tenn.	407
566.	Amalg. Clothing/Textile	New York	406
567.	Fort Worth Employees	Fort Worth, Texas	405
568.	Lever Brothers	New York	405
569.	Arizona Public Service	Phoenix	401
570.	TV & Radio Artists	New York	400
571.	Beatrice	Chicago	400
572.	Henley Group	La Jolla, Calif.	400
573.	J.P. Stevens	Greenville, S.C.	400
574.	Minneapolis Teachers	Minneapolis	400
575.	Westinghouse Handford	Richland, Wash.	400
576.	Andersen	Bayport, Minn.	398
577.	Piedmont Aviation	Winston-Salem, N.C.	398
578.	Perkin-Elmer	Norwalk, Conn.	397
579.	Centel	Chicago	395
580.	Mo. Highway Empl.	Jefferson City	395
581.	Cincinnati Milacron	Cincinnati	393
582.	Hawaiian Electric	Honolulu	393
583.	Illinois Tool Works	Chicago	391
584.	Clark Equipment	South Bend, Ind.	390
585.	Directors Guild	Los Angeles	390
586.	McKinsey	New York	390
587.	Springs Industries	Fort Mill, S.C.	390
588.	Boston Edison	Boston	389
589.	Sheet Metal 108	Los Angeles	388
590.	Belk/Leggett Stores	Charlotte, N.C.	387
591.	San Joaquin County	Stockton, Calif.	386
592.	Carpenters, Detroit	Ferndale, Mich.	385
593.	Rohr Industries	Chula Vista, Calif.	385
594.	Wash. Area Transit	Washington	385
595.	Denver Employees	Denver	384
596.	Alexander & Alexander	Baltimore	381
597.	Dresser Industries	Dallas	380
598.	Principal Mutual Life	Des Moines, Iowa	379
599.	S. Calif. Plumbing	Los Angeles	378
600.	Food/Comm. L.A.	Los Angeles	375
601.	Ventura County	Ventura, Calif.	375
602.	IBEW 134	Chicago	373
603.	Anchor Hocking	Lancaster, Pa.	369
604.	George A. Hormel	Austin, Minn.	369
605.	Hershey Foods	Hershey, Pa.	365
606.	UFCW, Midwest	Chicago	365
607.	Flint City	Flint, Mich.	364
608.	Philadelphia Carpenters	Philadelphia	364
609.	Brooklyn Union Gas	Brooklyn, N.Y.	363
610.	Ernst & Whinney	Cleveland	363
611.	Automotive Industries	Oakland, Calif.	361
612.	Building Trades United	Milwaukee	361
613.	Delmarva P&L	Wilmington, Del.	361
614.	Austin Employees	Austin, Texas	360
615.	Nalco Chemical	Naperville, Ill.	360
616.	EG&G	Wellesley, Mass.	359
617.	Phoenix City	Phoenix, Ariz.	358
618.	McDonald's	Oak Brook, Ill.	357
619.	N. Ind. Public Service	Hammond	357
620.	Colo. Public Service	Denver	356
621.	Hartford City	Hartford, Conn.	355
622.	Int'l Minerals & Chem.	Mundelein, Ill.	355
623.	Memphis Local Gov't	Memphis, Tenn.	355
624.	Nat'l Telephone Co-op.	Washington	355
625.	Harris Pump & Supply	Pittsburgh	354
626.	Food/Comm. 876	Madison Hgts., Mich.	352
627.	N. Dakota Teachers	Bismarck	352
628.	Boy Scouts	Irving, Texas	351
629.	Baton Rouge Empl.	Baton Rouge, La.	350
630.	Kerr-McGee	Oklahoma City	350
631.	Memphis Light, Gas	Memphis, Tenn.	350
632.	Electrical Contractors	Anchorage	349
633.	Hotel/Restaurant 165	Las Vegas, Nev.	349
634.	Boc Group	Montvale, N.J.	347
635.	Kern County	Bakersfield, Calif.	345
636.	Oklahoma Firefighters	Oklahoma City	345
637.	Bank of New York	New York	343
638.	Nat'l Industrial Group	Florham Park, N.J.	343
639.	Teamsters, Philadelphia	Philadelphia	342
640.	Savings Bank Empl.	Woburn, Mass.	340
641.	Trinova	Maumee, Ohio	340
642.	Reader's Digest	Pleasantville, N.Y.	339
643.	Hearst	New York	335
644.	Building Service	San Francisco	334
645.	Gates Rubber	Denver	334
646.	Plumbers/Pipefitters 597	Chicago	334
647.	Western Union	Up. Sad. Riv., N.J.	334
648.	Bricklayers & Trowel	Washington	333
649.	Lincoln Nat'l	Fort Wayne	333
650.	TPF&C	Philadelphia	333
651.	Zenith Electronics	Chicago	332
652.	Gerber Products	Fremont, Calif.	330
653.	Chicago Sanitary Dist.	Chicago	329
654.	Lowe's Cos.	N. Wilkesboro, N.C.	329
655.	Rochester G&E	Rochester, N.Y.	327
656.	Knight-Ridder	Miami	325
657.	Sonat	Birmingham, Ala.	325
658.	S.C. Johnson	Racine, Wis.	325
659.	TBG	New York	325
660.	Agway	Syracuse, N.Y.	324
661.	Sterling Drug	New York	324
662.	Nat'l Football League	New York	323
663.	Op. Eng. 15	New York	323
664.	Potomac Electric	Washington	323
665.	Laborers, Ohio	Columbus	322
666.	Nat'l Maritime Union	New York	322
667.	Vulcan Materials	Birmingham, Ala.	321
668.	Burroughs Wellcome	Res. Tri. Park, N.C.	320
669.	Washington Gas Light	Washington	320
670.	Upholsterers, Int'l	Philadelphia	319
671.	Equifax	Atlanta	318
672.	Salt River Project	Phoenix, Ariz.	318
673.	Maritime Assoc. ILA	Houston	317
674.	Electronic Data Systems	Dallas	316
675.	Longshore., STA-ILA	Baltimore	316
676.	St. Louis Public School	St. Louis	316
677.	Miami City	Miami	315
678.	Cyclops	Pittsburgh	315
679.	Sacramento City	Sacramento, Calif.	315
680.	Carnation	Los Angeles	314
681.	Comm. Clearing House	Riverwoods, Ill.	314
682.	Gulf States Utilities	Beaumont, Texas	314
683.	Western Metal Industry	Seattle	314
684.	Great Northern Nekoosa	Norwalk, Conn.	313
685.	N. Calif. Sheet Metal	San Francisco	313
686.	Tiger Int'l	Los Angeles	313
687.	Laborers 472/172	Newark, N.J.	311
688.	Mass. Carpenters	Burlington	310
689.	Louisiana Parochial	Natchitoches	310
690.	Masco	Taylor, Mich.	310
691.	Miami Fire & Police	Miami	310
692.	Stanley Works	New Britain, Conn.	310
693.	Williams Cos.	Tulsa, Okla.	310
694.	Fireman's Fund	Novato, Calif.	309
695.	Nat'l Fuel Gas	Buffalo, N.Y.	308
696.	Oklahoma Police	Oklahoma City	307
697.	St. Louis Police	St. Louis	305
698.	Insurance-Supp. Org.	New York	303
699.	Nestle	Purchase, N.Y.	302
700.	Fairfax County Schools	Springfield, Va.	300
701.	First Boston	New York	300
702.	Fort Howard	Green Bay, Wis.	300
703.	Graybar Electric	St. Louis	300
704.	N.D. Public Employees	Bismarck	300
705.	Dan River	Danville, Va.	299
706.	Loews	New York	299
707.	Consolidated Papers	Wis. Rapids, Wis.	298
708.	Flying Tiger	Los Angeles	297
709.	Labor 341/942, Alaska	Seattle	296
710.	O.I. Brockway	Toledo, Ohio	296
711.	Arlington County	Arlington, Va.	295
712.	Op. Eng. 825	Newark, N.J.	292
713.	Royal Insurance	Charlotte, N.C.	292
714.	Tampa Police & Fire	Tampa, Fla.	291
715.	Laborers, Mason Tend.	New York	290
716.	Outboard Marine	Waukegan, Ill.	290
717.	Plumbers 525	Las Vegas, Nev.	290
718.	Square D	Palatine, Ill.	289
719.	Arthur Young	New York	288
720.	Norfolk City	Norfolk, Va.	288
721.	Cultural Institutions	New York	287
722.	Pacific P&L	Portland, Ore.	286
723.	Anne Arundel County	Annapolis, Md.	285
724.	Food/Comm. 455	Houston	285
725.	Potlatch	San Francisco	285
726.	Champion Spark Plug	Toledo, Ohio	284
727.	Illinois Carpenters	Geneva	284
728.	Peabody Holding	St. Louis	284
729.	Transco Energy	Houston	284
730.	Fresno City	Fresno, Calif.	283
731.	Adolph Coors	Golden, Colo.	282
732.	Auto Workers, Nat'l HQ	Detroit	280
733.	Kansas P&L	Topeka	280
734.	Interco	St. Louis	279
735.	Revlon	New York	279
736.	Gould	Rolling Meadows, Ill.	277
737.	S. Calif. Plasterers	El Monte	277
738.	Blue Cross/Blue Shield	Detroit	276
739.	Kansas City	Kansas City, Mo.	276
740	Auto Workers 65	New York	275
741	J.M. Huber	Edison, N.J.	273
742.	Mass. Laborers	Newton	272
743.	Birmingham Retirement	Birmingham, Ala.	271
744.	Enserch	Dallas	270
745.	Thomas J. Lipton	Englew'd Cl., N.J.	270
746.	Capital Holding	Louisville, Ky.	269

Ranking of funds/sponsors 201 - 1,000

Assets in $ millions

Rank	Fund/sponsor	Location	Assets
747.	West Wash Carpenters	Seattle	269
748.	Elf Acquitaine	Stamford, Conn	269
749.	New Orleans Steamship	New Orleans	269
750.	Producer-Writers Guild	Burbank, Calif	268
751.	Rexnord	Brookfield, Wis	268
752.	Conagra	Omaha, Neb	266
753.	Longshoremen, ILA	Savannah, Ga	266
754.	Amerada Hess	New York	265
755.	Joy Technologies	Pittsburgh	265
756.	Oakland County Empl	Pontiac, Mich	265
757.	Santa Barbara County	Santa Barbara, Calif	265
758.	Maryland Supplemental	Baltimore	262
759.	Pechiney	Greenwich, Conn	262
760.	Actors Equity Extras	New York	260
761.	Loral	New York	260
762.	Rochester Telephone	Rochester, N.Y	260
763.	Carpenters, Int'l HQ	Washington	259
764.	Chicago Park	Chicago	259
765.	St. Louis City	St. Louis	259
766.	Alco Standard	Valley Forge, Pa	258
767.	Heavy Gen. Labor 472	Newark, N.J	258
768.	Sybron	Milwaukee	256
769.	Parker-Hannifin	Cleveland	255
770.	Steelworkers, Nat'l HQ	Pittsburgh	254
771.	Masonite	Chicago	252
772.	Wis. Public Service	Green Bay, Wis	252
773.	Hotel Restaurant 1	Chicago	251
774.	Laborers 341	Anchorage	251
775.	Carpenters, West. Pa	Pittsburgh	250
776.	Chesebrough-Pond's	Greenwich, Conn	250
777.	Combined Insurance	Chicago	250
778.	Commonwealth Energy	Cambridge, Mass	250
779.	Harcourt Brace	Orlando, Fla	250
780.	Printing Finance	New York	250
781.	Publix Super Markets	Lakeland, Fla	250
782.	Carter Hawley Hale	Los Angeles	249
783.	Service Employees 144	New York	249
784.	Central Beef	N'dham Hgts.,Mass	248
785.	Federal-Mogul	Detroit	248
786.	Hershey Products	Cleveland	248
787.	Illinois Power	Decatur, Ill	248
788.	S. Calif. Permanente	Pasadena	248
789.	American Water Works	Voohrees, N.J	247
790.	Scana	Columbia, S.C	247
791.	Amer. Insurance Assoc	New York	246
792.	Food Comm. 7	Wheat Ridge, Colo	246
793.	Laborers, Western Pa	Pittsburgh	246
794.	Utah P&L	Salt Lake City	246
795.	Iron Wrkrs, North. N.J.	Newark	245
796.	Tecumseh Products	Tecumseh, Mich	245
797.	American Nat'l Can	Chicago	244
798.	Amfac	San Francisco	244
799.	A.G. Edwards & Sons	St. Louis	244
800.	Wichita City	Wichita, Kan	242
801.	St. Paul Teachers	St. Paul, Minn	241
802.	Humana	Louisville, Ky	240
803.	Marin County	San Rafael, Calif	240
804.	Marmon	Chicago	240
805.	Portland Gen. Electric	Portland, Ore	240
806.	Charter	Jacksonville, Fla	239
807.	S'western Public Svc	Amarillo, Texas	238
808.	Witco	New York	238
809.	Great Lakes Carbon	Briarcliff Manor, N.Y	237
810.	Moorman Mfg	Quincy, Ill	237
811.	Ohio Casualty Insurance	Hamilton	237
812.	Allis-Chalmers	Milwaukee	236
813.	GATX	Chicago	236
814.	Bowater	Darien, Conn	235
815.	Food Comm. 1001	Bellevue, Wash.	235
816.	Libbey-Owens-Ford	Toledo, Ohio	235
817.	United Svc. Auto Assoc.	San Antonio, Texas	233
818.	Arvin Industries	Columbus, Ohio	232
819.	Farley Industries	Chicago	231
820.	Iron Wrkrs. 40/361/417	New York	231
821.	NVF	Miami Beach, Fla	231
822.	Prince Georges County	Landover, Md	229
823.	South Carolina E&G	Columbia	229
824.	Auto Machinists 289	Seattle	228
825.	Teco Energy	Tampa, Fla.	227
826.	Machinists 701	Chicago	226
827.	Banco Popular	Hato Rey, P.R.	225
828.	Black & Decker	Towson, Md.	225
829.	Dillon	Hutchinson, Kan.	225
830.	Pittston	Greenwich, Conn.	225
831.	AMCA Int'l	Hanover, N.H.	223
832.	Machinists 9	Bridgeton, Mo.	222
833.	Oakland Police & Fire	Oakland, Calif.	222
834.	Simpson Investment	Seattle	222
835.	Allegheny Int'l	Pittsburgh	221
836.	Lukens	Coatesville, Pa.	221
837.	Dynacast	Yorktown Hgts., Pa.	220
838.	Iron Workers Texas	Houston	220
839.	Knoxville City	Knoxville, Tenn.	220
840.	Arkansas Highway	Little Rock	219
841.	Harsco	Camp Hill, Pa.	219
842.	Mass. General Hospital	Boston	219
843.	Pennsylvania Municipal	Harrisburg	219
844.	Tandy/Radio Shack	Fort Worth, Texas	219
845.	Food/Comm. 576	Kansas City, Mo.	218
846.	Plumbers 798	Tulsa, Okla.	218
847.	Typographical Union	Chicago	218
848.	Blue Cross/Iowa	Des Moines	217
849.	Electrical Workers 332	San Jose, Calif.	217
850.	San Antonio Fire/Police	San Antonio, Texas	216
851.	Avery Int'l	Pasadena, Calif.	215
852.	Montgomery Co. Ed.	Rockville, Md.	215
853.	Plumb. 444/159/342/343	San Francisco	215
854.	Shelby County	Memphis, Tenn.	215
855.	SPX	Muskegon, Mich.	215
856.	Syntex	Palo Alto, Calif.	215
857.	Iron Workers 25	Novi, Mich.	214
858.	Leo Burnett	Chicago	214
859.	ARA Services	Philadelphia	213
860.	PACCAR	Bellevue, Wash.	213
861.	Media General	Richmond, Va.	212
862.	PaineWebber	New York	212
863.	Wyatt	Washington	210
864.	BBDO Int'l	New York	209
865.	Signode	Glenview, Calif.	209
866.	Greater Cleve. Hosp.	Cleveland	208
867.	MAPCO	Tulsa, Okla.	208
868.	ONEOK	Tulsa, Okla.	208
869.	Continental Grain	New York	207
870.	S. Calif. F/CLocals	Los Angeles	207
871.	S. Ohio Iron Workers	Dayton	207
872.	Archer Daniels Midland	Decatur, Ill.	206
873.	Duquesne Light	Pittsburgh	206
874.	Rubbermaid	Wooster, Mass.	206
875.	Howmet	Greenwich, Conn.	205
876.	Babcock Industries	Fairfield, Conn.	204
877.	Walter Industries	Tampa, Fla.	204
878.	K.C. Public School	Kansas City, Mo.	203
879.	Omaha Public Power	Omaha, Neb.	203
880.	Siemens Capital	New York	203
881.	Atlantic City Electric	Pleasantville, N.J.	202
882.	DeKalb Employees	Decatur, Ga.	202
883.	Brown Group	St. Louis	200
884.	Bufkor	St. Petersburg, Fla	200
885.	Cox Enterprises	Atlanta	200
886.	Dow Jones	New York	200
887.	Food Lion	Salisbury, N.C.	200
888.	Kansas City P&L	Kansas City, Mo.	200
889.	League of Vol. Hosp.	New York	200
890.	Marion Labs	Kansas City, Mo.	200
891.	Nashville/Davidson Co.	Nashville, Tenn.	200
892.	Plumbers/Steamfit 638	L. Island City, N.Y.	200
893.	Alcan Aluminum	Cambridge, Mass.	199
894.	Heublein	Farmington, Conn.	199
895.	Puget Sound P&L	Bellevue, Wash.	199
896.	Torchmark	Birmingham, Ala.	199
897.	Indianapolis P&L	Indianapolis	198
898.	Laborers 731	New York	198
899.	Op. Eng 542	Norristown, Pa.	198
900.	Smith Int'l	Newport Beach, Cal.	198
901.	Textile Workers, Nat'l	New York	198
902.	U.S. Borax & Chemical	Los Angeles	198
903.	Twin Cities Carp. 1644	Minneapolis	197
904.	Iron Wrkrs. 14/29/86	Seattle	197
905.	Newmont Mining	New York	197
906.	Castle & Cooke	Los Angeles	196
907.	Grand Union	Wayne, Pa.	196
908.	Foxboro	Foxboro, Mass.	195
909.	Indiana Farmers Mutual	Indianapolis	195
910.	Carpenters, New Jersey	Union	194
911.	Chubb	New York	193
912.	Salomon Brothers	New York	193
913.	Mid-Jersey Teamsters	North Brunswick	192
914.	Yellow Freight	Overland Park, Kan.	192
915.	Alltel	Little Rock, Ark.	191
916.	Amica Mutual	Providence, R.I.	190
917.	Engelhard	Edison, N.J.	190
918.	Op. Eng. 66	Pittsburgh	190
919.	Warner Comm.	New York	189
920.	Auto Club/S. Calif.	Los Angeles	188
921.	Dravo	Pittsburgh	188
922.	Figgie Int'l	Richmond, Va.	188
923.	SKF USA	King of Prussia, Pa.	188
924.	California Auto. Assoc.	San Francisco	186
925.	Copley Press	La Jolla, Calif.	186
926.	Brown-Forman	Louisville, Ky.	185
927.	Fairchild Industries	Chantilly, N.J.	185
928.	Food/Comm. 464	Little Falls, N.J.	185
929.	Omaha Public School	Omaha, Neb.	185
930.	Stanislaus County	Modesto, Calif.	185
931.	St. Louis Firemen	St. Louis	185
932.	Tacoma Employees	Tacoma, Wash.	185
933.	Vetco Gray	Houston	185
934.	Amsted Industries	Chicago	184
935.	Emery Air Freight	Wilton, Conn.	184
936.	Laborers 253	Jacksonville, Ill.	184
937.	Thomson McKinnon	New York	184
938.	Bell & Howell	Skokie, Ill.	183
939.	Bemis	Minneapolis	183
940.	Kansas City Police	Kansas City, Mo.	183
941.	Penn Central	Cincinnati	183
942.	Sisters of Mercy/Detroit	Farm'ton Hills, Mich.	183
943.	Blue Cross/Mass.	Boston	182
944.	Consol. Freightwys	Menlo Park, Calif.	182
945.	Electrical Workers 103	Dorchester, Mass.	182
946.	Op. Eng 66	Monroeville, Pa.	182
947.	Wang Labs	Lowell, Mass.	182
948.	Willamette Industries	Portland, Ore.	182
949.	Michelin Tire	Greenwood, S.C.	181
950.	Tulare County	Visalia, Calif.	181
951.	ADT Security	Parsippany, N.J.	180
952.	Dennison Mfg.	Waltham, Mass.	180
953.	FKI Babcock	Fairfield, Conn.	180
954.	Philadelphia Iron Wrkrs.	Philadelphia	180
955.	Laborers, Montana Dist.	Great Falls	180
956.	Providence Employees	Providence, R.I.	180
957.	Rapid-American	New York	180
958.	Ryder System	Miami	180
959.	Science Applications	San Diego	180
960.	Dayton P&L	Dayton, Ohio	179
961.	Electrical Workers 1186	Honolulu	178
962.	Kimball Int'l	Jasper, Ind.	178
963.	Stanadyne	Windsor, Conn.	178
964.	YWCA	New York	178
965.	Central Illinois Light	Peoria	177
966.	Diversified Energies	Minneapolis	176
967.	Super Valu Stores	Minneapolis	176
968.	Allegheny County	Pittsburgh	175
969.	Hartmarx	Chicago	175
970.	Limited Stores	Columbus, Ohio	175
971.	Nat'l Starch & Chem.	Bridgewater, N.J.	175
972.	Oklahoma G&E	Oklahoma City	175
973.	Pullman	Princeton, N.J.	175
974.	Deloitte, Haskins	New York	174
975.	Teamsters Council 83	Richmond, Va.	174
976.	Anchorage Police & Fire	Anchorage, Alaska	173
977.	A.E. Staley	Decatur, Ill.	173
978.	Twin City Pipe Trades	St. Paul, Minn.	173
979.	Inland Container	Indianapolis	172
980.	Richmond Supplemental	Richmond, Va.	172
981.	Genuine Parts	Atlanta	171
982.	Hotel Trades	New York	171
983.	Kaman	Bloomfield, Conn.	171
984.	Laborers, Detroit	Birmingham, Mich.	171
985.	N'western Steel & Wire	Sterling, Ill.	171
986.	Painters 9	New York	171
987.	Levi Strauss	San Francisco	170
988.	Lincoln Electric	Cleveland	170
989.	Lone Star	Greenwich, Conn.	170
990.	Macomb County	Mt. Clemens, Mich.	170
991.	Teamsters 182	Utica, N.Y.	170
992.	White Castle System	Columbus, Ohio	170
993.	Frank B. Hall	Briarcliff Manor, N.Y.	169
994.	North Jersey Teamsters	Union City, N.J.	169
995.	Barnes Group	Bristol, Conn.	168
996.	Mercedes-Benz	Montvale, N.J.	168
997.	Sheet Metal Wrkrs. 73	Chicago	168
998.	Waste Management	Oak Brook, Ill.	168
999.	Sony	Park Ridge, N.J.	167
1000.	W.W. Grainger	Skokie, Ill.	167

On the following pages, *Pensions & Investment Age* presents sketches of the nation's 200 largest pension funds. The profiles include each fund's asset allocation, investment managers and key personnel.

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A

Abbott Laboratories

	($ millions)
Total assets	1,530
Defined benefit	770
Defined contribution	760
Employer contributions	20
Benefit payments	22
Defined benefit asset mix:	
Stocks	40%
Bonds	60%
Defined contribution asset mix:	
Stocks	90%
GICs	10%

ABBOTT PARK, Ill. — As of Sept. 30, Abbott Laboratories' total employee benefit assets decreased 8.9% to $1.53 billion from $1.68 billion a year earlier. Defined benefit assets decreased 3.8% during the same period, to $770 million from $800 million. Defined contribution assets decreased 13.6%, to $760 million from $880 million.

Equity managers: Hagler, Mastrovita & Hewitt; Jennison; and RCM.

Fixed-income manager: RCM.

The master trustee is Continental Bank.

The key person overseeing the investment management of the fund is A.G. Olsen, director-employee financial programs.

Aetna Life & Casualty Co.

	($ millions)
Total assets	2,242
Defined benefit	1,462
401(k)	756
Other	24
Employer contributions	38
Benefit payments	85
In-house assets:	
Equities	730
Fixed income	95
Short term	17
Other	620
Alternative investments:	
International equities	87
Real estate equity	99
Mortgages	19
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	58%
Bonds	7%
Cash equivalents	1%
Real estate equity	7%
Annuities	27%
Defined contribution asset mix:	
Stocks	7%
GICs	63%
Company stock	30%

HARTFORD, Conn. — As of Sept. 30, Aetna Life & Casualty Co.'s total employee benefit assets declined 2.3% to $2.242 billion from $2.294 billion a year earlier. Defined benefit assets decreased 4.9% during the same period, to $1.462 billion from $1.537 billion. 401(k) assets increased 3.1%, to $756 million from $733 million.

All assets are managed by Aetna Capital Management, an affiliate of Aetna Life.

The master trustee is Connecticut National Bank.

Key personnel overseeing the investment management of the fund are P.R. Roberts, senior vice president-investments, and E.F. Kelly, senior vice president-pension and financial services.

Retirement Systems of Alabama

	($ millions)
Total assets*	7,000
Defined benefit	7,000
Employer contributions	272
Benefit payments	286
*book value	
In-house assets:	
Equities	911
Fixed income	5,246
Short term	829
Other	14
Passive investments:	
Indexed stocks	603
GICs	7
Alternative investments:	
Private placements	957
Real estate equity	7
Mortgages	1,223
Mortgage-backed securities	516
Hedging devices:	
Stock options	Y
Defined benefit asset mix:	
Stocks	13%
Bonds	49%
Cash equivalents	12%
Mortgages	18%
Mortgage-backed securities	8%

MONTGOMERY, Ala. — As of Sept. 30, assets of the Retirement Systems of Alabama increased 12.3% from a year earlier, to $7 billion from $6.233 billion. All the assets are managed internally.

Key personnel overseeing the investment management of the fund are David G. Bronner, chief executive officer; Hunter Reaves, director-fixed income; and Cheryl Duke, director-equities.

State of Alaska Retirement Systems

	($ millions)
Total assets	3,476
Defined benefit	3,476
Employer contributions	160
Benefit payments	118
In-house assets:	
Fixed income	1,794
Short term	305
Passive investments:	
Indexed stocks	71
Alternative investments:	
International equities	230
Real estate equity	231
Mortgages	219
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	33%
Bonds	45.3%
Cash equivalents	8.8%
Real estate equity	6.6%
Mortgages	6.3%

JUNEAU, Ala. — As of June 30, the State of Alaska Retirement Systems' total employee benefit assets increased 4.1% to $3.476 billion from $3.340 billion a year earlier. All assets are in defined benefit plans.

Equity managers: Domestic — Fred Alger; INVESCO; Lehman Management; and State Street Bank.

International — Citibank, London and Morgan Guaranty Trust.

Real estate managers: Aetna; Equitable; JMB; Karsten; J.P. Morgan; and Sentinel.

The master custodian is First Pennsylvania Bank.

Key personnel overseeing the investment management of the fund are James R. Wilson, chief investment manager; Kenneth L. Shaffer, portfolio manager; and Martin W. Lentz, real estate officer.

Allied-Signal Inc.

	($ millions)
Total assets	6,609
Defined benefit	4,833
Defined contribution	1,776
Employer contributions	175
Benefit payments	280
In-house assets:	
Equities	500
Fixed income	500
Short term	300
Passive investments:	
Indexed stocks	300
GICs	190
Alternative investments:	
International equities	245
Real estate equity	338
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	46%
Bonds	30.1%
Cash equivalents	10%
Real estate equity	7%
GICs	3.9%
Other	3%
Defined contribution asset mix:	
Stocks	61%
GICs	39%

MORRISTOWN, N.J. — As of Sept. 30, Allied-Signal Inc.'s total employee benefit assets decreased 2.9% to $6.609 billion from $6.808 billion a year earlier.

In addition to its international and real estate investments, Allied-Signal has $100 million invested in venture capital, oil and gas, private placements and leveraged buy-outs, for which it would not provide a breakout.

Equity managers: Domestic — Baron; BMI Capital; Chesapeake Capital; Delaware; Dodge & Cox; Johnson, Valliant & Broadfoot; KR Capital; John Levin; Lincoln Capital; Lord, Abbett; S Squared; Donald Smith; State Street Bank; Target Investors; Towneley Capital; Verus Capital; Weiss, Peck & Greer; Westport Asset; and Wilshire Asset.

International — Batterymarch; Arnhold & S. Bleichroeder; and Morgan Grenfell.

Fixed-income managers: Delaware; W.R. Huff; and J.P. Morgan.

Real estate managers: Aetna; Copley; John Hancock; MIG Realty; Property Capital; Prudential; RREEF; TCW Realty; and Travelers.

The master trustees are Northern Trust for the defined benefit plan and State Street Bank for the defined contribution plan.

Key personnel overseeing the investment management of the fund are Edward T. Tokar Jr., vice president-investments; Mark E. Smith, senior portfolio manager; and Jay W. Burden, portfolio manager.

Aluminum Co. of America

	($ millions)
Total assets	2,892
Defined benefit	2,400
401(k)	492
Employer contributions	200
Benefit payments	175
Passive investments:	
Dedicated/immunized	1,253
Alternative investments:	
International equities	35
International bonds	25
Venture capital	47
Oil and gas	2
LBOs	26
Real estate equity	78
Mortgage-backed securities	75
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	17%
Bonds	67%
Cash	10%
Real estate equity	3%
Mortgage-backed securities	3%
Defined contribution asset mix:	
Stocks	7%
Company stock	28%
GICs	65%

PITTSBURGH — As of Sept. 30, Aluminum Co. of America's total employee benefit assets decreased 5.9% to $2.892 billion from the $3.072 billion *Pensions & Investment Age* estimated a year earlier. Defined benefit assets decreased 11.2% during the same period, to $2.4 billion from the estimated $2.703 billion, and 401(k) plan assets increased 33%, to $492 million from $369 million.

Equity managers: Domestic — Franklin Portfolio; Geewax, Terker; Matrix; Rosenberg Institutional; State Street Bank; and Wells Fargo.

International — Capital Guardian and Mercator.

Fixed-income managers: Domestic — Massachusetts Financial; Mellon Bond; J.P. Morgan; and STW.

International — Massachusetts Financial.

Real estate managers: Coldwell Banker; Equitable; John Hancock; and RREEF.

The master trustee is Mellon Bank.

Key personnel overseeing the investment management of the fund are Joseph C. Pellegrino, director-pension investments and analysis, and Donna S. Barr, trust investment analyst.

American Airlines

	($ millions)
Total assets	3,100
Defined benefit	1,550
Defined contribution	1,200
401(k)	350
Employer contributions	150
Benefit payments	120
In-house assets:	
Equities	50
Fixed income	760
Short term	90
Passive investments:	
Dedicated/immunized	750
Alternative investments:	
International equities	130
International bonds	30
Real estate equity	10
Mortgage-backed securities	250
Hedging devices:	
Stock options	Y
Defined benefit asset mix:	
Stocks	25%
Bonds	50%
Cash equivalents	10%
Mortgage-backed securities	15%
Defined contribution asset mix:	
Stocks	81%
Cash equivalents	12%
GICs	7%

FORT WORTH, Texas — As of Sept. 30, American Airlines' total employee benefit assets were substantially unchanged from a year earlier, reporting $3.1 billion vs. $3.13 billion a year earlier. Defined benefit assets decreased 3.1% during the same period, to $1.55 billion from $1.6 billion, and defined contribution assets decreased 7.7% to $1.2 billion from $1.3 billion.

Balanced managers: Domestic — Barrow, Hanley; Capital Guardian; Hotchkis and Wiley; Independence; NCNB Texas; and Penmark.

International — Morgan Grenfell; Rowe Price-Fleming; and N.M. Rothschild.

The master trustee is NCNB Texas; the global custodian is Chase Manhattan.

Key personnel overseeing the investment management of the fund are William F. Quinn, president of AMR Investment Services, and Thomas M. Stawicki, vice president of AMR Investment Services.

American Electric Power Co.

	($ millions)
Total assets	1,561
Defined benefit	1,062
Thrift or savings/401(k)	499
Employer contributions	15
Benefit payments	48
Passive investments:	
Indexed stocks	164
Alternative investments:	
Venture capital	29
Real estate equity	17
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	62%
Bonds	19%
Cash equivalents	14%
Real estate equity	2%
Other	3%

COLUMBUS, Ohio — As of Sept. 30, American Electric Power Co.'s total employee benefit assets increased 6.6% to $1.561 billion from $1.465 billion a year earlier. Defined benefit assets decreased 4.1% during the same period, to $1.062 billion from $1.107 billion. Thrift and savings/401(k) plan assets rose 44.6% to $499 million from $345 million.

Equity managers: BEA; Manning & Napier; Meeder; Metropolitan; Mount Vernon; W.H. Reaves; Fayez Sarofim; Thorndike, Doran, Paine & Lewis; and Robert Torray.

Fixed-income managers: BEA; Manning & Napier; MEG; and Thorndike, Doran, Paine & Lewis.

Real estate managers: Fayez Sarofim and Metropolitan Life.

Venture capital manager: John Hancock.

The master trustee is Irving Trust; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are Joseph H. Shepard, manager-system corporate benefit funds; and Gerald P. Maloney, senior vice president-finance.

American Information Technologies Corp.

	($ millions)
Total assets	12,100
Defined benefit	10,400
401(k)	1,700
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	800
Short term	1,200
Passive investments:	
Indexed stocks	650
Indexed bonds	550
Dedicated/immunized	3,100
Alternative investments:	
International equities	700
International bonds	100
Venture capital	125
Real estate equity	650
Mortgages	50
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	49%
Bonds	40%
Cash equivalents	5%
Real estate equity	6%

CHICAGO — As of Sept. 30, American Information Technologies Corp.'s total employee benefit assets decreased 3.9% to $12.1 billion from $12.592 billion a year earlier. Defined benefit assets decreased 6.8% during the same period to $10.4 billion from $11.157 billion. 401(k) plan assets increased 18.5% to $1.7 billion from $1.435 billion.

Ameritech executives would not provide a list of external managers. The following list was provided by Money Market Directory.

Investment managers: Ameritrust; Baring International; CIGNA; Concord Capital; Delaware Investment; Deriva-

Largest corporate funds

Fund	Assets $ millions
General Motors	37,600
AT&T	35,143
General Electric	25,300
IBM	21,761
Ford Motor	19,650
E.I. du Pont de Nemours	16,489
NYNEX	13,401
Ameritech	12,100
Bell Atlantic	10,816
GTE	10,596
BellSouth	10,505
Pacific Telesis	9,639
USX	8,860
Rockwell Int'l	8,583
Boeing	8,476
U S WEST	8,133
Eastman Kodak	7,825
Exxon	7,609
Sears, Roebuck	7,176
Lockheed	7,113
United Technologies	7,000
Southwestern Bell	6,961
Shell Oil	6,586
Allied-Signal	6,609
McDonnell Douglas	6,482
Total	320,493

Largest public funds

Fund	Assets $ millions
California Public Employees	45,940
New York Stae & Local	37,918
New York City	35,537
California State Teachers	24,721
New York State Teachers	22,779
New Jersey Investment	20,092
Texas Teachers	19,439
Wisconsin Investment Board	16,419
Ohio Public Employees	16,406
State of Michigan	15,796
Ohio State Teachers	15,348
Florida State Board	14,411
North Carolina Systems	13,800
Pennsylvania Public School	12,999
Washington State Board	10,867
Minnesota State Board	10,207
Oregon Public Employes	8,800
Los Angeles County	8,744
Maryland State	8,717
Virginia Supplemental	8,041
Pennsylvania State Employes	7,967
Colorado Public Employees	7,591
Georgia Teachers	7,525
Illinois Teachers	7,043
Alabama Systems	7,000
Total	404,111

Largest miscellaneous funds

Fund	Assets $ millions
TIAA-CREF	67,141
University of California	10,123
United Nations Joint Staff	7,146
Illinois State Universities	3,060
United Methodist Church	2,903
World Bank	2,667
Tennessee Valley Authority	2,500
Southern Baptist Convention	2,223
Presbyterian Church (USA)	2,000
Nat'l Rural Electric Co-op	1,982
Episcopal Church Pension Fund	1,470
Evangelical Lutheran Church	1,420
Army & Air Force Exchange	1,386
Total	108,061

tive Markets; First Chicago; First Wisconsin Asset; First Wisconsin Trust; General American Life; David J. Greene; IDS Advisory; IDS Financial; IDS International; Jennison Associates; JMB; Lincoln Capital; Loomis, Sayles; Lord, Abbett; Metropolitan Life; National Investment Services; Neuberger and Berman; PSI; RCM; RREEF; Sit Investment; Travelers; and Wells Fargo Investment Advisors.

The master trustee is Harris Trust; the investment consultant is Callan.

The key person overseeing the investment management of the fund is Donald W. Phillips, director-investment management.

American Stores Co.

	($ millions)
Total assets	1,623
Defined benefit	84
Defined contribution	1,539
Employer contributions	62
Benefit payments	28
Passive investments	
Indexed stocks	17
Alternative investments	
International equities	39
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	51.4%
Bonds	48.6%
Defined contribution asset mix	
Stocks	36%
Bonds	47%
Cash equivalents	2%
Company stock	15%

SALT LAKE CITY, Utah — As of Sept. 30, American Stores Co.'s total employee benefit assets increased 0.7% to $1.623 billion from $1.611 billion the previous year. Defined benefit assets decreased 13% during the same period, to $83.5 million from $96 million. Defined contribution assets increased 1.6%, to $1.539 billion from $1.515 billion a year earlier.

Equity managers: Domestic — Bankers Trust; Institutional Capital; Lazard Freres; RCM; Templeton; and Wells Fargo.

International — Templeton.

Fixed-income managers: Domestic — Neuberger & Berman; PIMCO; and Western Asset.

Real estate managers: Coldwell Banker, LaSalle and RREEF.

The master trustee and global custodian are Bankers Trust; the investment consultant is Evaluation Analysis Inc.

Key personnel overseeing the investment management of the fund are Scott Bergeson, executive vice president, and Duane Whitney, controller.

American Telephone & Telegraph Co.

	($ millions)
Total assets	35,143
Defined benefit	28,691
Thrift or savings	5,851
ESOP	601
Employer contributions	563
Benefit payments	1,150
In-house assets	
Other	1,615
Passive investments	
Indexed stocks	8,170
Indexed bonds	3,867
Alternative investments	
International equities	1,613
Venture capital	443
Oil and gas	245
LBOs	356
Private placements	794
Real estate equity	3,678
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	55%
Bonds	28%
Real estate equity	13%
Other	4%
Defined contribution asset mix	
Stocks	23%
Bonds	5%
Cash equivalents	4%
GICs	33%
Company stock	35%

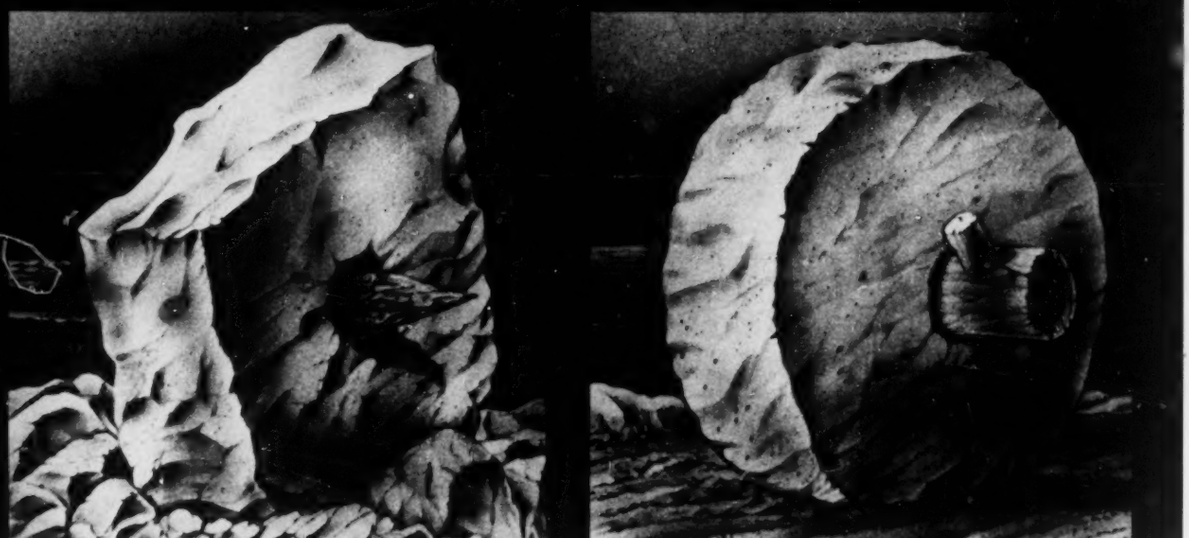
NEW YORK — As of Sept. 30, American Telephone & Telegraph Co.'s total employee benefit assets decreased 6.5% to $35.143 billion from $37.577 billion. Defined benefit assets decreased 7% during the same period, to $28.691 billion from $30.838 billion.

Managers: Abbott Capital; ABD; Aldrich, Eastman; Bankers Trust; Batterymarch; Boston Co. Real Estate; Brown Brothers Harriman; Capital Guardian; Chase Investors; Citibank; Coldwell Banker; Copley Real Estate; Corporate Property Investors; Denver Investment Advisors; Discount Corp.; Eastdil Advisers; Equitable; Favia, Hill; Fidelity International; First Wachovia; Goldman, Sachs; G.T. Capital; John Hancock; Heitman; INVESCO; Investment Counselors of Maryland; Ivory & Sime; Jennison; JMB; Karsten Institutional Realty; Lincoln Capital; Loomis, Sayles; Lord, Abbett; Mitchell, Hutchins; Mellon Bank; J.P. Morgan; Morgan Grenfell; NCNB Texas; O'Connor Management; PIMCO; Posthorn; Prudential; RCM; RREEF; Standish, Ayer & Wood; State Street Bank; State Street Research; Thorndike, Doran, Paine & Lewis; United Capital Management; United States Trust/N.Y.; Wells Fargo Bank; and Western Asset.

Trustees for the AT&T master pension trust are Bankers Trust, Chase Manhattan, Citibank, Mellon Bank, Northern Trust and State Street Bank. The global custodian is Chase Manhattan; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are David P. Feldman, corporate vice president; Robert E. Angelica, director; and Ronald R. Roessler, director.

A Little Imagination Can Make A Big Difference.



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NCNB

*As reported by CDA Investment Technologies, Inc. for the period ending December 31, 1987.

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Amoco Corp.

	($ millions)
Total assets	4,014
Defined benefit	2,214
Thrift or savings	1,618
ESOP	182
Employer contributions	101
Benefit payments	192
In-house assets	
Equities	309
Short term	57
Passive investments	
Indexed stocks	183
Alternative investments	
International equities	243
Venture capital	47
LBOs	76
Real estate equity	105
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	66%
Bonds	10%
Cash equivalents	14%
Real estate equity	5%
Venture capital/LBOs	5%

CHICAGO — As of Sept. 30, Amoco Corp.'s total employee benefit assets decreased 6.7% to $4.014 billion from $4.3 billion a year earlier. Defined benefit assets decreased 12% during the same period, to $2.214 billion from $2.515 billion. Savings plan assets increased 3.3%, to $1.618 billion from $1.567 billion. ESOP assets decreased 16.5%, to $182 million from $218 million.

Equity managers: Domestic — CMB; Chase Manhattan; Dimensional; Fidelity Management Trust; Forstmann-Leff; Franklin Portfolio; Fayez Sarofim; and State Street Research.

International — Fidelity International and State Street Bank.

Fixed-income manager: PIMCO.

Real estate manager: Equitable.

The master trustee and global custodian is Chase Manhattan.

Key personnel overseeing the investment management of the fund are Marvin L. Damsma, director-pension administration, and John S. Ruey, administrative manager-investments.

Arizona State Retirement System

	($ millions)
Total assets	6,429
Defined benefit	6,429
Employer contributions	127
Benefit payments	200
In-house assets	
Short term	88
Passive investments	
Indexed stocks	932
Indexed bonds	339
Alternative investments	
International equities	434
Mortgages	233
Defined benefit asset mix	
Stocks	41%
Bonds	42%
Cash equivalents	13%
Mortgages	4%

PHOENIX, Ariz. — As of Sept. 30, the Arizona State Retirement System's total employee benefit assets in-

creased 4% to $6.429 billion from $6.182 billion a year earlier. All the assets are in a defined benefit plan.

Equity managers: Domestic — Bernstein-Macaulay; Boston Co.; Criterion; Fiduciary Trust; IDS Advisory; INVESCO; J.P. Morgan; and Wells Fargo.

International — State Street Bank and Warburg.

Fixed-income managers: Boston Co.; Criterion; Duff & Phelps; Fiduciary Trust; IDS Advisory; INVESCO; J.P. Morgan; and Wells Fargo.

Mortgage manager: Valley National Bank.

The master custodian is Mellon Bank; the global custodians are Mellon Bank and State Street; the consultant used for performance measurement is Mercer-Meidinger-Hansen.

Key personnel overseeing the investment management of the fund are Edwin C. Gallison, director, and Douglas Lemon, assistant director-finance.

Structured investing: Feb. 20.

Arkansas Teacher Retirement System

	($ millions)
Total assets*	1,827
Defined benefit	1,827
Employer contributions	81
Benefit payments	105
*as of July 30, 1988	
In-house assets	
Short term	199
Alternative investments	
Private placements	30
Mortgages	49
Mortgage-backed securities	175
Defined benefit asset mix	
Stocks	35%
Bonds	41.1%
Cash equivalents	11.6%
Mortgages	2.7%
Mortgage-backed securities	9.6%

LITTLE ROCK, Ark. — As of July 30, the Arkansas Teacher Retirement System's total employee benefit assets increased 2.99% to $1.827 billion from $1.774 billion Sept. 30, 1987.

Equity manager: Oppenheimer Capital.

Fixed-income manager: First Commercial Bank.

The master trustee is First Commercial Bank and the state treasurer; the investment consultant is Shearson Lehman Hutton.

Key personnel overseeing the investment management of the fund are Mavolene C. Booth, investment manager, and Wayne Greathouse, investment coordinator.

Armco Inc.

	($ millions)
Total assets	1,889
Defined benefit	1,657
Profit-sharing	10
Thrift or savings	205
401(k)	17
Employer contributions	83
Benefit payments	175
In-house assets	
Fixed income	436
Short term	65
Passive investments	
Indexed stocks	205
Dedicated/immunized	436
GICs	24
Alternative investments	
International equities	42
Other international	26
Venture capital	9
Private placements	8
Real estate equity	9
Mortgage-backed securities	133
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	36.2%
Bonds	18.8%
Cash equivalents	4%
Real estate equity	0.5%
Mortgage-backed securities	8%
GICs	1.4%
Other	11.1%
Defined contribution asset mix	
Stocks	4%
GICs	48%
Company stock	48%

MIDDLETOWN, Ohio — As of Sept. 30, Armco Inc.'s total employee benefit assets decreased 5.5% to $1.889 billion from $1.999 billion a year earlier. Defined benefit assets decreased 7.7% during the same period, to $1.657 billion from $1.795 billion. Thrift/savings plan assets increased 29.7%, to [illegible] million from $158 million.

Equity managers: Domestic — Alliance; Capital Guardian; Columbus Circle; Lincoln; Mellon Capital; and Miller, Anderson & Sherrerd.

International — Oechsle.

Fixed-income manager: Armco Investment.

Real estate manager: RREEF.

GIC manager: John Hancock.

Private placements manager: Equitable.

The master trustee and global custodian is Chase Manhattan; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Dennis F. Furey, executive vice president, Armco Investment; Ronald A. Stuepfert, vice president, Armco Investment; and Leo J. Koch, assistant vice president, Armco Investment.

Army and Air Force Exchange Service

	($ millions)
Total assets*	1,386
Defined benefit	1,355
Thrift or savings	31
Employer contributions	64
Benefit payments	61
*as of June 30, 1988	
Passive investments	
Indexed stocks	153
Alternative investments	
International equities	108
International bonds	70
Venture capital	18
Private placements	113
Real estate equity	97
Mortgage-backed securities	23
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	62%
Bonds	28%
Real estate equity	8%
Mortgage-backed securities	2%
Defined contribution asset mix	
GICs	100%

DALLAS — As of June 30, the Army and Air Force Exchange Service's total employee benefit assets increased 6.2% to $1.386 billion from $1.305 billion a year earlier. Defined benefit assets increased 6.1% during the same period, to $1.355 billion from $1.277 billion.

Equity managers: Domestic — Capital Technology; Chancellor; Independence; Nicholas-Applegate; Trinity; Wells Fargo; and Westport.

International — Citibank, London; Morgan Grenfell; and State Street Bank.

Fixed-income managers: Domestic — Chancellor; Dimensional Fund; Hibernia; and Wilmington Trust.

International — PCM.

Real estate managers: Aetna (equity and mortgages); Goldman; John Hancock; JMB; LaSalle; J.P. Morgan; and RREEF.

Venture capital: Abbott Capital and John Hancock.

Portfolio insurance: Aetna.

Bankers Trust is master custodian and global custodian; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Martin R. Handel, comptroller; Russel D. English, deputy comptroller; and Kenneth C. Weaver, assistant comptroller-insurance.

Atlantic Richfield Co.

	($ millions)
Total assets	2,977
Defined benefit	2,113
Thrift or savings	408
401(k)	285
ESOP	171
Employer contributions	na
Benefit payments	165
In-house assets	
Equities	1,000
Fixed income	320
Short term	30
Other	78
Passive investments	
GICs	53
Alternative investments	
International bonds	57
Venture capital	42
Oil and gas	4
Private placements	35
Real estate equity	149
Mortgages	13
Mortgage-backed securities	140
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	53.8%

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Bonds	18.6%
Cash equivalents	7%
Real estate equity	7.1%
Mortgages	0.8%
Mortgage-backed securities	6.6%
GICs	2.5%
Other	3.8%
Defined contribution asset mix	
Stocks	60%
Cash equivalents	40%

LOS ANGELES — As of Sept. 30, Atlantic Richfield Co.'s total employee benefit assets decreased 8% to $2.977 billion from $3.236 billion a year earlier. Defined benefit assets decreased 10.4% during the same period, to $2.113 billion from $2.357 billion. Thrift/savings plan assets decreased slightly, to $408 million from $411 million.

Equity managers: International — G.T. Capital, Rowe Price-Fleming, TCW, and Warburg.

Fixed-income managers: Domestic — MacKay-Shields, J.P. Morgan, Solomon, and Weiss, Peck & Greer.

International — Baring.

Real estate managers: Aldrich, Eastman & Waltch, Fox Group, and Lehndorff & Babson.

Other managers: Payden & Rygel and Security Pacific.

The master trustee and global custodian is State Street Bank.

E. Kent Damon Jr., vice president and investment officer, oversees the investment management of the fund.

B

Bakery & Confectionery Union & Industry International Pension Fund

	($ millions)
Total assets	1,849
Defined benefit	1,849
Employer contributions	145
Benefit payments	147
In-house assets	
Other	124
Passive investments	
Indexed stocks	65
Indexed bonds	45
Dedicated/immunized	70
GICs	50
Alternative investments	
International equities	23
Mortgages	124
Defined benefit asset mix	
Stocks	36.5%
Bonds	41.7%
Cash equivalents	12%
Mortgages	6.7%
GICs	2.7%
Other	0.6%

KENSINGTON, Md. — As of Sept. 30, the Bakery & Confectionery Union & Industry International Pension Fund's total employee benefit assets decreased 7.7% to $1.849 billion from $2 billion a year earlier.

Balanced managers: Lazard Freres, Loomis, Sayles, M.D. Sass, Stein, Roe & Farnham, Trust Co. of the West, and Wertheim.

About $23 million are invested in Canadian stocks on behalf of Canadian plan participants.

The master custodian is Mercantile-Safe Deposit.

Key personnel overseeing the investment management of the fund are John J. Fleming, administrative director, and Richard Swift, director of investments.

Baltimore City Retirement Systems

	($ millions)
Total assets	1,343
Defined benefit	1,343
Employer contributions	30
Benefit payments	59
Passive investments	
Dedicated/immunized	68
GICs	73
Alternative investments	
Real estate equity	45
Mortgages	15
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	41%
Bonds	36.9%
Cash equivalents	12%
Real estate equity	3%
Mortgages	1.1%
GICs	6%

timore City's employee benefit assets decreased 4.1% to $1.343 billion from $1.4 billion a year earlier. All assets are in defined benefit plans.

Equity managers: Addison; Ariel; Crawford; Delaware; Dietch and Field; Dreman; Hudson; and Investment Counselors of Maryland.

Fixed-income managers: Oppenheimer; Fayez Sarofim; and State State Research.

Real estate managers: CIGNA; Heitman; JMB; and Schroder.

Options manager: Balch, Hardy.

The master custodian is Mercantile-Safe Deposit; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are Ernest J. Glinka, administrator; Thomas P. Taneyhill, deputy administrator; and Charles W. Parker, accounting manager.

Bechtel Power Corp.

	($ millions)
Total assets	1,417
Defined contribution	1,417
Employer contributions	30
Benefit payments	115
Defined contribution asset mix	
Stocks	38%
Bonds	15%
Cash equivalents	14%
GICs	2%
International securities	25%
Real estate	6%

SAN FRANCISCO — As of Sept. 30, Bechtel Power Corp.'s total employee benefit assets decreased 4.1% to $1.417 billion from $1.478 billion a year earlier. All assets are defined contribution.

The master trustee and global custodian is Bankers Trust; the investment consultant is Sierra Asset Management.

Key personnel overseeing the investment management of the fund are David L. Redo, president, Sierra Asset, and Vincent P. Kuhn Jr., executive vice president, Sierra Asset.

Bell Atlantic Corp.

	($ millions)
Total assets*	10,816
Defined benefit	9,116
Thrift or savings	84
401(k)	1,421
ESOP	195
Employer contributions	na
Benefit payments	na
*as of Aug. 31, 1988	
Passive investments	
Indexed stocks	600
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y

PHILADELPHIA — Bell Atlantic Corp.'s total employee benefit assets decreased 6% to $10.816 billion as of Aug. 31 from $11.502 billion Sept. 30, 1987.

Defined benefit assets decreased 8.6% to $9.116 billion from $9.974 billion during the same period. Thrift saving plan assets fell 80.1% to $84 million from $430 million; 401(k) assets rose 72.5%, to $1.421 billion from $824 million; and ESOP assets fell 28.8% to $195 million from $274 million.

Bell Atlantic supplied the data on its asset totals, trustees and personnel, but declined to disclose its investment managers. The following list came from the 1989 Money Market Directory.

Managers: Abbott Capital; Aldrich Eastman & Waltch; Aronson and Fogler, Bankers Trust; Chancellor Capital; CIGNA Investments; Copley Real Estate; Corporate Property Investors; Richard Ellis; Fischer Francis Trees & Watts; Franklin Portfolio; Geewax Terker; Grantham Mayo Van Otterloo; Jennison Associates; JMB; LaSalle Advisors; Matrix Capital; Mellon Capital; Mellon Real Estate; Mercator Asset; Metropolitan Life; Miller Anderson & Sherrerd; The New England; O'Connor Group; PIMCO; PRIMECAP; Rosenberg Institutional; Walter Scott International; Standish Ayer & Wood; State Street Bank; Thorndike Doran Paine & Lewis; Travelers Insurance; Vanguard; Wellington Management; and Wellington

The master trustee for the defined benefit fund is Mellon Bank; the custodian for the 401(k) plans is Bankers Trust; the global custodian is State Street Bank; and the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Joseph A. Bobrowski, executive director-trust administration, and Edward P. Rennie, executive director-trust investment.

BellSouth Corp.

	($ millions)
Total assets	10,505
Defined benefit	8,785
Thrift/savings/401(k)/ESOP	1,720
Employer contributions	na
Benefit payments	na
In-house assets	
Short term	513

ATLANTA — As of Sept. 30, BellSouth Corp.'s total employee benefit assets increased 4.3% to $10.505 billion from $10.07 billion a year earlier. Defined benefit assets increased 4.8% during the same period, to $8.785 billion from $8.384 billion. Defined contribution assets increased 2% to $1.72 billion from $1.686 billion.

BellSouth executives did not release further data on the assets.

Managers: Aetna Life; Alliance Capital; AmSouth; Bankers Trust; Barnett Banks; Brown Brothers Harriman; C&S Investment; Connecticut General; Dimensional Fund Advisors; First Kentucky Co.; First Tennessee; First Union; INVESCO; Jennison Associates; Loomis, Sayles; Metropolitan Life; Mutual Benefit Life; NCNB National Bank; PIMCO; Pension Realty Advisors; Provident National Assurance; Prudential Asset Management; Richmond Capital Management; South Carolina National; State Street Bank; Sun Banks; TREET; Travelers Insurance; First Wachovia; Wells Fargo Investment.

The master trustee for the defined benefit fund is First Wachovia; the trustee and custodian for the savings plans is Bankers Trust.

Key personnel overseeing the investment management of the fund are Kincaid Patterson, director-trust assets, and Mary O. Wier, corporate manager-trust assets.

Bethlehem Steel Corp.

	($ millions)
Total assets	2,722
Defined benefit	2,722
Employer contributions	700
Benefit payments	471
In-house assets	
Equities	761
Fixed income	1,508
Short term	388
Other	43
Passive investments	
GICs	35
Alternative investments	
International equities	23
Mortgage-backed securities	550
Defined benefit asset mix	
Stocks	29%
Bonds	35%
Cash equivalents	14%
Mortgage-backed securities	20%
GICs	2%

BETHLEHEM, Pa. — As of Sept. 30, Bethlehem Steel Corp.'s total employee benefit assets held relatively steady, rising to $2.722 billion from $2.699 billion a year earlier. All of the assets are defined benefit.

Equity managers: International — J.P. Morgan and Putnam.

The master custodian is Bankers Trust.

The key person overseeing the investment management of the fund is J. Gerard Mead, pension fund manager.

Boeing Co.

	($ millions)
Total assets*	8,475
Defined benefit	5,221
Thrift or savings	3,254
Employer contributions	571
Benefit payments	na
*From Money Market Directory	

SEATTLE — As of June 30, Boeing Co.'s total employee benefit assets increased 29.6% to $8.475 billion from

Largest defined benefit plans

Fund	Assets ($ millions)
California Public Employees	45,940
New York State & Local	37,918
New York City	35,537
General Motors	32,500
AT&T	28,691
California State Teachers	24,721
New York State Teachers	22,779
General Electric	21,100
New Jersey Investment	19,892
Texas Teachers	19,439
IBM	19,332
Wisconsin Investment Board	16,419
Ohio Public Employees	16,408
State of Michigan	15,798
Ohio State Teachers	15,348
Ford Motor	15,100
Florida State Board	14,411
North Carolina Systems	13,800
Pennsylvania Public School	12,999
E.I. du Pont de Nemours	11,570
NYNEX	11,262
Washington State Board	10,867
Ameritech	10,400
Minnesota State Board	9,657
University of California	9,153
Total	491,041

to the 1989 Money Market Directory. Defined benefit assets increased 32.5% during the same period, to $5.221 billion from $3.94 billion. Thrift/savings assets increased 25.3% to $3.254 billion from $2.598 billion a year earlier.

All information for this profile came from MMD.

Managers: Beekman; Robert C. Brown; Cambiar; Cashman, Farrell; Chase Investors; Chase Investors; Chase Manhattan Bank; Geewax, Terker; IDS Advisory; IDS Financial; INVESCO; Miller, Anderson & Sherrerd; J.P. Morgan; Olympic Capital; PIMCO; PRIMECAP; RCM; Roanoke; Russell; Seattle Capital; Security Pacific; Sit; Cabanne Smith; TCW Asset; Waite & Correnti; and Westwood.

The master trustee is Chase Manhattan Bank.

Key personnel overseeing investment management of the fund are Gary B. Bland, vice president-trust investments and investor relations; and Elizabeth A. Marcoux, manager-trust investments.

Board of Trustees, Boilermaker Blacksmith National Pension Trust

	($ millions)
Total assets	2,128
Defined benefit	2,128
Employer contributions	56
Benefit payments	na
In-house assets	
Short term	8
Passive investments	
Dedicated/immunized	113
GICs	68
Alternative investments	
Private placements	45
Real estate equity	241
Defined benefit asset mix	
Stocks	41%
Bonds	34%
Cash equivalents	8%
Real estate equity	12%
GICs	3%
Other	2%

KANSAS CITY, Kan. — As of Sept. 30, total benefit assets of the Board of Trustees, Boilermaker Blacksmith National Pension Trust decreased 4.6% to $2.128 billion from $2.23 billion a year earlier.

Equity managers: Fred Alger; Independence; Lazard Freres; McMorgan; Neuberger & Berman; Shields Asset; Sosnoff Associates; and Trust Co. of the West.

Fixed-income managers: Fred Alger; Financial Counselors; Lehman; Loomis, Sayles; McMorgan; Scudder; and TCW.

Real estate managers: Equitable; Karsten; Morgan Guaranty; New England; and Prudential.

Co-generation manager: TCW.

The master custodian is Brotherhood Bank & Trust; the investment consultant is Callan.

vestment management of the fund are Arthur E. Farr, chairman-investment committee; Charles Woelfer, chairman-board of trustees; and David Hanson, financial director.

BP America Inc.

	($ millions)
Total assets	1,883
Defined benefit	1,156
401(k)	727
Employer contributions	108
Benefit payments	156
In-house assets	
Equities	219
Fixed income	83
Short term	107
Passive investments	
Indexed stocks	191
Alternative investments	
International equities	152
Venture capital	25
Real estate equity	71
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	65%
Bonds	15.8%
Cash equivalents	13.1%
Real estate equity	6.1%
Defined contribution asset mix	
Stocks	18.8%
Bonds	0.4%
Cash equivalents	9.2%
GICs	76.4%
Company stock	4.2%

CLEVELAND — As of Sept. 30, total employee benefit assets of BP America Inc., formerly The Standard Oil Co., decreased 3.2% to $1.883 billion from $1.946 billion. Defined benefit assets decreased 10.1% during the same period to $1.156 billion from $1.286 billion, and 401(k) plan assets increased 10.2% to $727 million from $660 million.

Equity managers: Domestic — Alliance Capital; United Capital; Value Line.

International — Baring International; Boston International; and Mellon Capital.

Fixed-income manager: Mellon Capital.

Real estate managers: First Chicago; Sentinel; and Trust Co. of the West.

Venture capital manager: Mitchell Hutchins.

The master trustee for the retirement plan is Bankers Trust, and for the savings plan, National City Bank; the global custodian is Bankers Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are E.J.P. Browne, executive vice president and chief financial officer; D.J. Atton, vice president-finance; and D.J. Hamilton, director-pension investments.

C

California Public Employees' Retirement System

	($ millions)
Total assets	45,940
Defined benefit	45,940
Employer contributions	2,134
Benefit payments	1,785
In-house assets	
Equities	16,686
Fixed income	21,468
Short term	864
Other	2,782
Passive investments	
Indexed stocks	4,109
Alternative investments	
Real estate equity	2,782
Mortgages	2,741
Mortgage-backed securities	8,200
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	43.9%
Bonds	22.5%
Cash equivalents	3.6%
Real estate equity	6%
Mortgages	6%
Mortgage-backed securities	18%

SACRAMENTO — As of Sept. 30, California Public Employees' Retirement System total employee benefit assets and defined benefit assets increased 4.3% to $45.94 billion from

Equity managers: Domestic — Atalanta/Sosnoff; Batterymarch; Chancellor; Dimensional Fund; First Chicago; Lazard Freres; RCM; Roll and Ross; and TSA.

Real estate managers: Equitable; FIA; Hancock; Heitman; LaSalle; and TCW Realty.

The master custodian is Boston Safe Deposit & Trust; the investment consultant is Wilshire Associates.

Key personnel overseeing the investment management of the fund are Basil J. Schwan, acting chief investment officer; Walton R. Williams, principal investment officer.

California State Teachers' Retirement System

	($ millions)
Total assets	24,721
Defined benefit	24,721
Employer contributions	700
Benefit payments	1,775
In-house assets	
Short term	2,240
Passive investments	
Indexed stocks	9,290
Indexed bonds	4,633
Alternative investments	
Private placements	526
Real estate equity	855
Mortgages	684
Mortgage-backed securities	2,590
Defined benefit asset mix	
Stocks	46.9%
Bonds	27.8%
Cash equivalents	8.4%
Real estate equity	3.5%
Mortgages	2.8%
Mortgage-backed securities	10.6%

SACRAMENTO, Calif. — As of Sept. 30, the California State Teachers' Retirement System's total employee benefit assets increased 4.2% to $24.721 billion from $23.714 billion a year earlier. All the assets are defined benefit.

Equity managers: Barrow, Hanley; Denver Investment; Pilgrim, Baxter; Provident Investment; TCW Asset; Trinity; Wells Fargo; Wilmington Capital; and Wright Investors.

Fixed-income manager: Mitchell Hutchins.

Real estate managers: Equitable; Lehndorff & Babson; and TCW.

The master custodian is State Street Bank; the investment consultant is Wilshire Associates and the real estate consultant is Institutional Property Consultants.

Key personnel overseeing the investment management of the fund are Thomas E. Flanigan, chief investment officer and Sandra Martin-King, assistant chief executive officer-investments.

University of California

	($ millions)
Total assets	10,123
Defined benefit	9,153
Other	970
Employer contributions	256
Benefit payments	77
In-house assets	
Equities	6,834
Fixed income	2,319
Alternative investments	
Venture capital	271
Mortgage-backed securities	14
Defined benefit asset mix	
Stocks	75%
Bonds	25%

BERKELEY, Calif. — As of Sept. 30, the University of California's total employee benefit assets decreased 9.8% to $10.123 billion from $11.228 billion a year earlier. Defined benefit assets decreased 11.4% during the same period, to $9.153 billion from $10.329 billion. Assets in the 403(b) plan increased 7.8%, to $969.5 million from $899 million.

All of the assets are managed internally.

The master trustee is Security Pacific National Bank.

Key personnel overseeing the investment management of the fund are Herbert Gordon, treasurer, and Patricia Small, associate treasurer.

Caterpillar Inc.

	($ millions)
Total assets	4,138
Defined benefit	3,610
Defined contribution	373
Profit-sharing	4
401(k)	110
ESOP	41
Employer contributions	na
Benefit payments	na
Passive investments	
Indexed stocks	550
Dedicated/immunized	1,000
Alternative investments	
International equities	400
Oil and gas	14
Real estate equity	203
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	52%
Bonds	35%
Cash equivalents	7%
Real estate equity	6%
Defined contribution asset mix	
Stocks	42%
Bonds	3%
Cash equivalents	4%
GICs	46%
Company stock	5%

PEORIA, Ill. — As of Sept. 30, Caterpillar Inc.'s total employee benefit assets decreased 6.4% to $4.138 billion from $4.423 billion a year earlier. Defined benefit assets decreased 5% during the same period, to $3.61 billion from $3.8 billion. Defined contribution assets decreased 23.3% to $373.5 million from $487 million a year earlier.

Equity managers: Domestic — Delaware; Jennison; Mellon Capital; Oppenheimer; PRIMECAP; and Trinity.

International — Baring; Fidelity; Mellon Capital; and Mercator.

Fixed-income managers: Chase Investors and J.P. Morgan.

Real estate managers: Aetna; Chase Investors; Citibank; First Chicago; and LaSalle Advisors.

The master trustee and global custodian is Northern Trust; the investment consultant is Frank Russell.

The key person overseeing the investment management of the fund is F.V. Dickinson, manager-risk management and employee benefit funds.

Chevron Corp.

	($ millions)
Total assets*	6,006
Defined benefit	3,810
Thrift or savings	2,196
Employer contributions	na
Benefit payments	na

*P&I Age estimate

SAN FRANCISCO — *Pensions & Investment Age* estimates that as of Sept. 30, Chevron Corp.'s total employee benefit assets decreased 13.1% to $6.006 billion from $6.912 billion a year earlier. *P&I Age* estimates the company's defined benefit assets decreased 6.3% during the same period, to $3.81 billion from $4.064 billion, while defined contribution assets decreased 22.9%, to $2.196 billion from $2.848 billion.

Equity managers: Domestic — Sanford Bernstein; Concord Partners II; Hellman & Friedman; Jennison; and KKR.

Fixed-income managers: Domestic — PIMCO; Starbuck, Tisdale & Williams; and State Street.

Real estate managers: Crocker; Prudential; RREEF; and Travelers.

Other managers: [illegible] Capital and Wells Fargo.

The master trustee for the defined benefit plan is Bankers Trust; for the profit-sharing and savings plan, the master trustee is Mellon Bank. The investment consultant is Frank Russell.

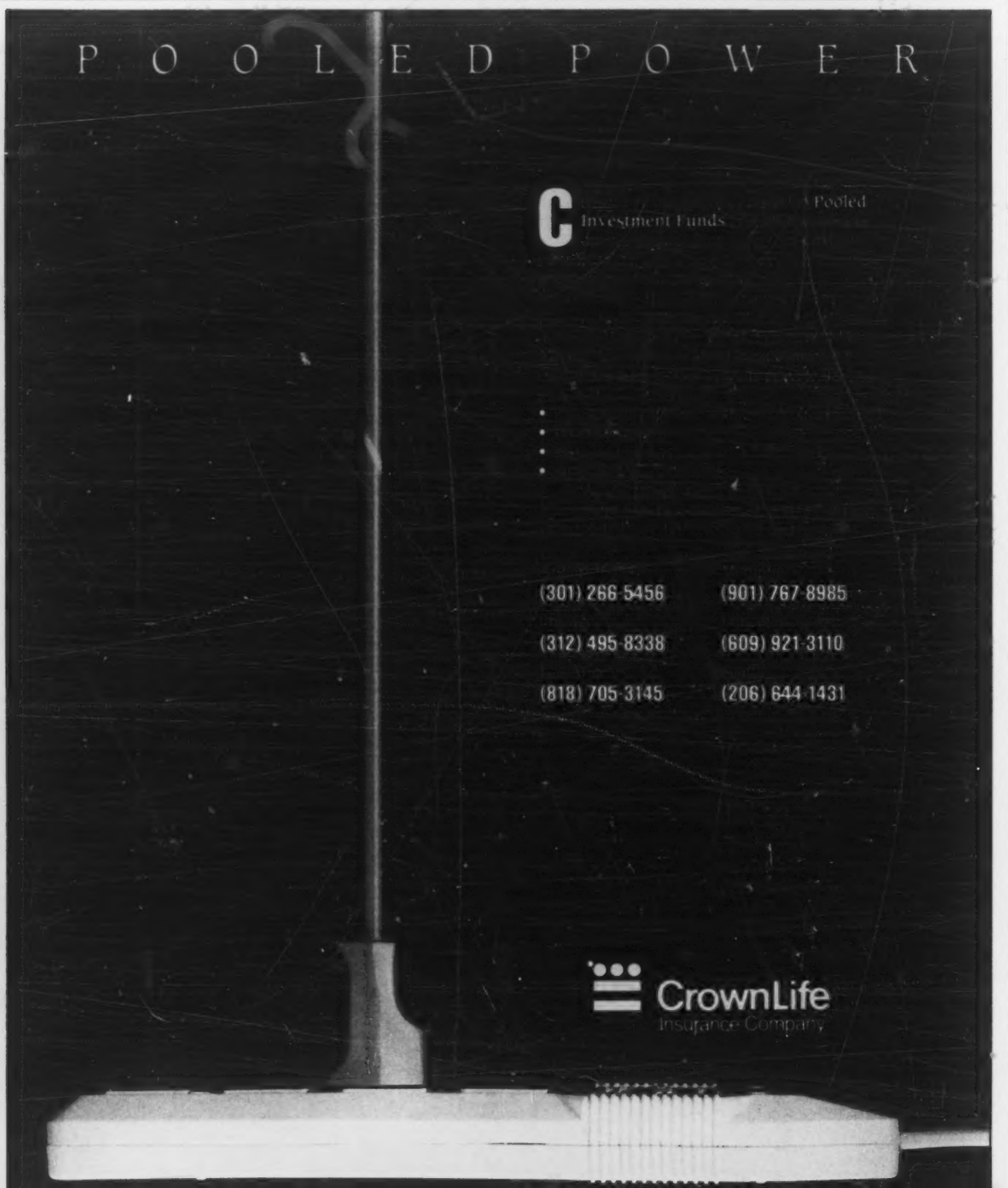
Key personnel overseeing the investment management of the fund are L.C. McGraw, vice president-finance; R.G. Williamson, assistant comptroller; and N.G. Darling, manager-investment analysis.

Municipal Annuity & Benefit Fund of Chicago

	($ millions)
Total assets*	1,600
Defined benefit	1,600
Employer contributions	100
Benefit payments	120

*book value

In-house assets	
Short term	68
Alternative investments	
International equities	71
Venture capital	54
Real estate equity	56
Mortgages	46
Mortgage-backed securities	75
Hedging devices	
Stock options	Y



Bonds	27%
Cash equivalents	22%
Real estate equity	4%
Mortgages	3%
Mortgage-backed securities	5%
Other	4%

CHICAGO — As of Sept. 30, the book value of the Municipal Annuity & Benefit Fund of Chicago's total employee benefit assets increased 3.6% to $1.6 billion from $1.545 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Ariel, Bankers Trust, Chicago Asset, Hawthorne, and Oppenheimer Capital.

International — Frank Russell Trust.

Fixed-income managers: Alliance, Bankers Trust, First Chicago, and Trident.

Real estate managers: Aetna, Equitable, Prudential, and Trident Meyer.

Venture capital managers: Citicorp Investment, First Analysis, Mesirow Financial, and Pacific Inland.

The master custodian is Continental Illinois National Bank & Trust. The investment consultant is Becker, Burke Associates.

Key personnel overseeing the investment management of the fund are Thomas Stack, executive director; Michael Neht, comptroller; Laima Milaitis, deputy executive director.

Public School Teachers' Pension and Retirement Fund of Chicago

	($ millions)
Total assets	2,981
Defined benefit	2,981
Employer contributions	145
Benefit payments	138
In-house assets:	
Equities	441
Fixed income	1,799
Short term	144
Defined benefit asset mix:	
Stocks	15%
Bonds	47%
Cash equivalents	25%

CHICAGO — As of Sept. 30, Public School Teachers' Pension and Retirement Fund of Chicago assets totaled $2.981 billion. All assets are in defined benefit plans.

All assets are managed internally, with Capital Supervisors serving in an advisory capacity.

The key person overseeing the investment management of the fund is James F. Ward, executive director.

Chrysler Corp.

	($ millions)
Total assets	4,414
Defined benefit	3,713
Thrift or savings*	441
401(k)*	161
ESOP*	93
Employer contributions	230
Benefit payments	480
*as of Dec. 31, 1987	
In-house assets:	
Equities	358
Passive investments:	
Indexed stocks	358
GICs	11
Alternative investments:	
International equities	31
Real estate equity	88
Mortgages	3
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	46%
Bonds	40%
Cash equivalents	12%
Real estate equity	2%

HIGHLAND PARK, Mich. — As of Sept. 30, Chrysler Corp.'s total employee benefit assets increased 4.5% to $4.414 billion from $4.225 billion a year earlier. Defined benefit assets increased 5% during the same period, to $3.713 billion from $3.535 billion.

Equity managers: Ariel; Associated Capital; Atalanta Sosnoff; Avatar; Bear Stearns; Sanford Bernstein; Chase; Columbus Circle; DBL; Fidelity Asset; Glickenhaus; Hahn Holland; John Hancock; Harris Associates; Hotchkis & Wiley; InterMedia; Investment Research; Leavy; Manufacturers National-Detroit; McKenzie Walker; Merrill Lynch; Mitchell Hutchins; Pacific Asset; Palley-Needelman; Perpetuity Asset; Reimer and Koger; Rothschild; Ruggles & Brainard; Fayez Sarofim; SHL Capital; TCW; and Veronis Suhler.

Fixed-income managers: Domestic — Aetna; Bankers Trust; Drexel Burnham; Irving Trust; Metropolitan Realty; J.P. Morgan; Morgan Petroleum Fund; Morgan Stanley; National Bank of Detroit; Travelers; TCW; and State Street Research.

Real estate managers: JMB; Prudential; RREEF; Shearson Lehman Hutton.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are F.W. Zuckerman, vice president and treasurer; J.L. Arpin, assistant treasurer; and R.P. Flynn, manager-pension fund investments.

CIGNA Corp.

	($ millions)
Total assets	1,454
Defined benefit	1,025
Defined contribution	59
Profit-sharing	90
Thrift or savings	280
Employer contributions	45
Benefit payments	46
In-house assets:	
Equities	56
Fixed income	174
Short term	7
Other	90
Passive investments:	
Indexed stocks	44
Alternative investments:	
International equities	47
Private placements	60
Real estate equity	90
Hedging devices:	
Stock index futures	Y
Defined benefit asset mix:	
Stocks	54%
Bonds	36%
Cash equivalents	1%
Real estate equity	9%
Defined contribution asset mix:	
Stocks	11%
Company stock	8%
Other	81%

PHILADELPHIA — As of Sept. 30, CIGNA Corp.'s total employee benefit assets increased 7.6% to $1.454 billion from $1.351 billion a year earlier. Defined benefit assets were unchanged at $1.025 billion. Defined contribution assets increased more than 1000% to $59 million from $5 million, while profit-sharing assets dropped 3.2% to $90 million from $93 million and savings plan assets increased 22.8% to $280 million from $228 million.

All plan assets are managed by affiliates of CIGNA.

Key personnel overseeing the investment management of the fund are James G. Stewart, executive vice president and chief financial officer, and George R. Trumbull, executive vice president and chief investment officer.

Public Employees Retirement Association of Colorado

	($ millions)
Total assets	7,591
Defined benefit	7,591
Employer contributions	287
Benefit payments	324
In-house assets:	
Equities	2,386
Fixed income	2,520
Short term	120
Other	1,474
Passive investments:	
Indexed stocks	327
GICs	623
Alternative investments:	
International equities	895
Venture capital	15
LBOs	45
Private placements	57
Real estate equity	363
Mortgages	623
Mortgage-backed securities	927
Defined benefit asset mix:	
Stocks	31%
Bonds	22.8%
Cash equivalents	4%
Real estate equity	5%
Mortgages	8%
Mortgage-backed securities	12.2%
GICs	4%
Other	13%

DENVER — As of Sept. 30, assets of the Public Employees Retirement Association of Colorado decreased 2.7% to $7.591 billion from $7.802 billion a year earlier.

Equity managers: International — Alliance; Baring International; First Chicago; Morgan Grenfell; Nomura; and Wertheim-Philippe.

Northern Trust is the master custodian and global custodian; the investment consultant is Capital Trust.

Key personnel overseeing the investment management of the fund are Norman Benedict, chief investment officer, and Terry Maltarich, director-fixed income.

Commonwealth Edison Co.

	($ millions)
Total assets	1,861
Defined benefit	1,861
Employer contributions	na
Benefit payments	na
In-house assets:	
Equities	618
Fixed income	741
Short term	209
Passive investments:	
Indexed stocks	196
Alternative investments:	
International equities	26
International bonds	15
Private placements	4
Mortgage-backed securities	135
Hedging devices:	
Stock index futures	Y
Defined benefit asset mix:	
Stocks	48%
Bonds	34%
Cash equivalents	11%
Mortgage-backed securities	7%

CHICAGO — As of Sept. 30, Commonwealth Edison Co.'s defined benefit assets decreased 4.6% to $1.861 billion from $1.951 billion a year earlier. All of the assets are defined benefit.

The bulk of the assets, $1.566 billion, is managed internally. The balance is run by various commingled fund and mutual fund managers, which Commonwealth Edison officials declined to identify.

The master custodian is Northern Trust.

Key personnel overseeing the investment management of the fund are H.R. Carlson, manager of investments; J.A. Cerney, equity portfolio manager; and R.P. Schwartz, fixed-income and operations manager.

The State of Connecticut Trust Funds

	($ millions)
Total assets	6,236
Defined benefit	6,236
Employer contributions	800
Benefit payments	na
In-house assets:	
Fixed income	890
Short term	136
Passive investments:	
Indexed stocks	700
GICs	35
Alternative investments:	
International equities	272
Venture capital	21
Real estate equity	912
Mortgages	121
Defined benefit asset mix:	
Stocks	45%
Bonds	34%
Cash equivalents	5%
Real estate equity	15%
GICs	1%

HARTFORD, Conn. — As of Sept. 30, The State of Connecticut Trust Funds' total employee benefit assets increased 8.7% to $6.236 billion from $5.736 billion a year earlier.

Equity managers: Domestic — Aetna; Ariel; Bankers Trust; Capital Guardian; Concord Capital; Connecticut National; Franklin; New England Asset Management; One Lewis Street; Oppenheimer; Phoenix Mutual; Roanoke; and Wright.

International — Boston International; Capital Guardian; Fidelity; Nomura; Schroder.

Fixed-income managers: Bear Stearns; Loomis Sayles; PIMCO; Standish, Ayer; State Street Research; and STW.

Real estate managers: Aetna; Aldrich, Eastman & Waltch; CIGNA; Copley; Hancock; Heitman; JMB; J.P. Morgan; Phoenix; Public Storage; RREEF; and TCW.

The master trustee and global custodian is Boston Safe Deposit; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are Frances Borges, state treasurer, and Frank McDermott, assistant treasurer-investments.

Consolidated Edison Co. of New York

	($millions)
Total assets	2,549
Defined benefit	2,549
Employer contributions	75
Benefit payments	115

NEW YORK — As of Sept. 30, Consolidated Edison Co. of New York's total employee benefit assets decreased 10.7% to $2.549 billion from $2.853 billion a year earlier. All the assets are in a defined benefit plan.

Company officials declined to release any further information.

The key person overseeing the investment management of the fund is John N. Bell, assistant treasurer.

Deere & Co.

	($ millions)
Total assets	2,300
Defined benefit	2,150
401(k)	150
Employer contributions	29
Benefit payments	180
In-house assets:	
Equities	1,375
Fixed income	425
Passive investments:	
Indexed stocks	1,000
Dedicated immunized	425
Alternative investments:	
International equities	50
Venture capital	30
Real estate equity	30
Defined benefit asset mix:	
Stocks	74.6%
Bonds	19.7%
Cash equivalents	2.7%
Real estate equity	1.5%
Venture capital	1.5%
Defined contribution asset mix:	
GICs	78%
Company stock	5%
Other	17%

MOLINE, Ill. — As of Sept. 30, Deere & Co. had total employee benefit assets of $2.3 billion. Defined benefit assets were $2.15 billion and defined contribution assets were $150 million. A meaningful comparison with year-earlier figures was not possible.

Equity managers: Domestic — Batterymarch and J.P. Morgan.

International — J.P. Morgan.

Real estate manager: J.P. Morgan.

The master trustee and global custodian for the defined benefit plan is Boston Safe; the custodian for the 401(k) plan is State Street Bank; the investment consultant is Irwin Tepper Associates.

Key personnel overseeing the investment management of the fund are Dennis R. Schwartz, assistant treasurer-investments, and Carl Liebscher, director-investments.

State of Delaware

	($ millions)
Total assets*	1,369
Defined benefit	1,369
Employer contributions	62
Benefit payments	61
*as of June 30, 1988	
Passive investments:	
Indexed stocks	197
Indexed bonds	290
Alternative investments:	
International equities	29
International bonds	45
Venture capital	46
Real estate equity	9
Mortgage-backed securities	141
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	40.1%
Bonds	31.4%
Cash equivalents	14.1%
Real estate equity	0.7%
Mortgage-backed securities	10.3%
Other	3.4%

DOVER, Del. — As of June 30, the State of Delaware's total employee benefit assets increased 5.3% to $1.369 billion from $1.3 billion a year earlier. All the assets are defined benefit.

Equity managers: Domestic — Alliance; Equity Link; Froley, Revy; Lincoln Capital; Mellon Capital; T. Rowe Price; TCW; Trinity Investment; and Wells Fargo Bank.

International — Batterymarch.

Fixed-income managers: Domestic — Mellon Capital; Weiss, Peck & Greer; and Wells Fargo Bank.

International — N.M. Rothschild and Rowe Price-Fleming.

Real estate managers: Aetna; Citibank; and John Hancock.

Other managers: Accel Partners; Arscott Norton; Brentwood Associates; Cherry Tree Venture; Dougery Jones & Wilder; Fidelity Daily Income Trust; Julian Cole & Stein; Morgan Holland; T. Rowe Price Threshold Fund; Scudder Cash Reserves; Spectra Enterprises; and Summit Venture.

The master custodian is Mercantile Safe-Deposit; the investment consultant is Ashford Capital.

Key personnel overseeing the investment management of the fund are Bruce O. Kallos, chairman-investment committee; Theodore H. Ashford, investment committee executive secretary; and Ernest Dannemann, chairman-board of pension trustees.

Delta Air Lines Inc.

	($ millions)
Total assets	3,296
Defined benefit	2,746
Thrift or savings	550
Employer contributions	200
Benefit payments	60
In-house assets:	
Equities	100
Fixed income	200
Passive investments:	
GICs	18
Alternative investments:	
International equities	200
Venture capital	40
LBOs	50
Real estate equity	35
Mortgage-backed securities	50
Hedging devices:	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix:	
Stocks	55%
Bonds	23.2%
Cash equivalents	15%
Real estate equity	1%
Mortgage-backed securities	1.8
GICs	1%
Other	3%

ATLANTA — As of Sept. 30, Delta Air Lines Inc.'s total employee benefit assets increased 4.6% to $3.296 billion from $3.15 billion. Defined benefit assets decreased 0.1% during the same period, to $2.746 billion from $2.75 billion.

Delta declined to identify its money managers. According to the 1989 Money Market Directory, they are Globe Finlay; Harris Trust; Metropolitan Life; and Richards & Tierney.

The master trustee is Harris Trust.

Key personnel overseeing the investment management of the fund are Jim Taylor, assistant vice president-investment management, and Jim Mathews, manager-investment management.

City of Detroit Retirement Systems

	($ millions)
Total assets*	3,291
Defined benefit	2,802
Defined contribution	489
Employer contributions	157
Benefit payments	186
*book value as of June 30, 1988	
In-house assets:	
Fixed income	15
Short term	35
Passive investments:	
Indexed stocks	45
GICs	380
Alternative investments:	
International equities	16
International bonds	41
Other international	3
Private placements	485
Real estate equity	62
Mortgages	482
Mortgage-backed securities	114
Consolidated asset mix:	
Stocks	26%
Bonds	18%
Cash equivalents	11%
Real estate equity	2%
Mortgages	13%
Mortgage-backed securities	3%
GICs	12%
Other	15%

DETROIT — The book value of the total employee benefit assets of the City of Detroit Retirement Systems, composed of the General Retirement System and the Police & Fire Retirement System, increased 11.6% to $3.291 billion as of June 30, up from $2.948 billion a year earlier. Defined benefit assets increased 11.2% during the same period, to $2.802 billion from $2.52 billion. Defined contribution assets increased 14.3%, to $489 million from $428 million.

Equity managers: Domestic —

AFA; Ariel; Bankers Trust; Boston Co. of Southern California; Comerica; Harbor; Loomis, Sayles; Manufacturers Bank, Detroit; Marquette Capital; Munder; Oppenheimer Capital; Putnam; and Scudder, Stevens, Clark.

International — Citibank, London.

Fixed-income managers: Domestic — Boston Co. of Southern California; Harbor; Loomis, Sayles; Marquette Capital; Munder; Oppenheimer; Putnam; and Scudder, Stevens, Clark.

International — Putnam.

Real estate managers: Mellon Real Estate and Mortgage Investors.

The master custodian for the general system is Comerica; the police and fire system uses Manufacturers Bank. The investment consultant for both systems is Prudential-Bache.

Key personnel overseeing the investment management of the funds are Thomas Zdrodowski, administrative supervisor, and Nicholas Degel, assistant administrative supervisor.

Digital Equipment Corp.

	($ millions)
Total assets	1,398
Defined benefit	1,219
401(k)	179
Employer contributions	48
Benefit payments	6
In-house assets	
Equities	410
Other	7
Passive investments	
Indexed stocks	259
Indexed bonds	100
Alternative investments	
International equities	36
Venture capital	7
Real estate equity	154
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	62%
Bonds	15%
Cash equivalents	10%
Real estate equity	13%

ACTON, Mass. — As of Sept. 30, Digital Equipment Corp.'s total employee benefit assets increased 5.7% to $1.398 billion from $1.322 billion a year earlier. Defined benefit assets increased 1.5% during the same period, to $1.219 billion from $1.201 billion. The 401(k) assets increased 47.9%, to $179 million from $121 million.

Equity managers: Domestic — Alliance; Bankers Trust; and Capital Guardian.

International — Boston International and Capital Guardian.

Fixed-income managers: Bankers Trust and Jennison.

Real estate manager: Aldrich, Eastman & Waltch.

The master trustee is Boston Safe Deposit.

The key person overseeing the investment management of the fund is A. Raymond Schmalz, manager-U.S. pension fund.

The Dow Chemical Co.

	($ millions)
Total assets*	2,924

*P&I Age estimate

MIDLAND, Mich. — As of Sept. 30, The Dow Chemical Co.'s total employee benefit assets increased 1.2% to $2.924 billion from $2.89 billion a year earlier, *Pensions & Investment Age* estimates.

E.I. du Pont de Nemours & Co.

	($ millions)
Total assets	16,489
Defined benefit	11,570
Thrift or savings	4,531
401(k)	111
SESOP & TRASOP	277
Employer contributions	103
Benefit payments	639
In-house assets	
Equities	5,448
Fixed income	2,275
Short term	3,783
Other	64
Passive investments	
Indexed stocks	1,531
Alternative investments	
International equities	297
International bonds	749
Venture capital	53
Private placements	26
Real estate equity	64
Mortgage-backed securities	686
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	47%
Bonds	14%
Cash equivalents	32%
Real estate equity	1%
Mortgage-backed securities	6%

WILMINGTON, Del. — As of Sept. 30, E.I. du Pont de Nemours & Co.'s total employee benefit assets decreased 2.2% to $16.489 billion from $16.868 billion a year earlier. During the same period, defined benefit assets decreased 5.9% to $11.57 billion from $12.3 billion. Thrift/savings plan assets increased 21.5% to $4.531 billion from $3.728 billion a year earlier.

All the defined benefit assets are managed internally.

The primary master trustee is Wilmington Trust Co.; the global custodian is Chase Manhattan Bank.

Key personnel overseeing the investment management of the fund are Keith E. Tucker, vice president; Edward J. Bassett, director, equity investments; and Larry R. Starett, director, fixed-income investments.

Pensions & Investment Age will examine structured investing Feb. 20.

E

Eastern Air Lines Inc.

	($ millions)
Total assets	2,041
Defined benefit	1,200
Defined contribution	841
Employer contributions	71
Benefit payments	na
Passive investments	
GICs	540
Alternative investments	
Real estate equity	120
Defined benefit asset mix	
Stocks	30%
Bonds	5%
Cash equivalents	10%
Real estate equity	10%
GICs	45%
Defined contribution asset mix	
Stocks	75%
Other	25%

MIAMI — As of Sept. 30, Eastern Air Lines Inc.'s total employee benefit assets decreased 20.4% to $2.041 billion from $2.565 billion a year earlier. Defined benefit assets decreased 20% during the same period, to $1.2 billion from $1.5 billion. Assets in the Eastern Air Lines Variable Benefit Plan for Pilots, a defined contribution plan, decreased 21% to $841 million from $1.065 billion.

The asset mixes for both the defined benefit plan and the defined contribu-

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tion plan are as of Jan. 1, 1988.

Investment managers for the defined benefit assets were: Delafield; Delaware; Equitable Real Estate; Forstmann-Leff; INVESCO; Northern Investment; Pacific Financial; Prudential Asset; Solomon; and Templeton.

Key personnel overseeing the investment management of the fund are Joseph L. Fromm, director-pension asset management; Rolf S. Andresen, chief financial officer; and Richard A. Schroeter, vice president and treasurer.

Money managers for the pilots' variable benefit plan were:

Equity managers: Atlantic Century; Brandywine; Campbell Advisors; Capital Guardian; Cramer Rosenthal McGlynn; Hawthorne Associates; National Investment Services; Waite & Correnti; and Wellington.

Fixed-income managers: Capital Guardian and Hawthorne.

Real estate managers: Hawthorne and NCNB.

The custodian for the pilots' plan is State Street.

Key personnel overseeing the investment management of the fund are Charles G. Dyer, director; N. Allen Taylor, director, real estate; and Wayne D. Wetzel Jr., executive vice president.

Eastman Kodak Co.

	($ millions)
Total assets*	7,825
Defined benefit	5,900
401(k)	1,925
Employer contributions	na
Benefit payments	na
*P&I Age estimate	
Alternative investments	
Real estate equity	400
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	65%
Cash equivalents	5%
Real estate equity	7%
Annuities	18%
Other	5%
Defined contribution asset mix	
Stocks	6%
GICs	79%
Company stock	15%

ROCHESTER, N.Y. — As of Sept. 30, Eastman Kodak Co.'s total employee benefit assets decreased 5.3% to $7.825 billion from $8.264 billion a year earlier, according to *Pensions & Investment Age* estimates. Defined benefit assets decreased 11.2% during the same period, to $5.9 billion from $6.643 billion. 401(k) assets increased 18.8%, to $1.925 billion from $1.621 billion.

Managers as of Dec. 31, 1987, were:

Equity managers: Domestic — American National Bank, Chicago; Analytic; Baker, Nye; Sanford C. Bernstein; Boston Safe Deposit; Brignoli, Curley & Roberts; Fidelity Management Trust; McKenzie Walker; Neuberger and Berman; T. Rowe Price; PRIMECAP; Rogers, Casey & Barksdale; Rosenberg Institutional; TCW; Value Line; and Wardell & Reed.

Global — Rogers, Casey & Barksdale and Templeton.

Real estate managers: Aetna; Copley; Equitable; Goldman Sachs; JMB; Lehndorff & Babson; National Life Insurance; PCA Tishman Speyer; PSI Institutional; and RREEF.

Foreign exchange managers: Bankers Trust and FX Concepts.

Annuities manager: Metropolitan Life.

Tactical asset allocator: Boston Co.

Capital growth manager: John Hancock.

LBO managers: Forstmann Little and Nightingale Atlantic.

Venture capital manager: Horsley, Keogh.

Managed futures manager: Mount Lucas.

Oil & gas managers: Chase Investors and J.P. Morgan.

Cash manager: Discount Corp. of New York.

Other: Evaluation Associates.

Boston Safe Deposit is the master trustee and global custodian.

Key personnel overseeing the investment management of the fund are Russell L. Olson, director-pension investments, and A. Duff Lewis Jr., pension investment coordinator.

Church Pension Fund (Episcopal)

	($ millions)
Total assets	1,470
Defined benefit	1,470
Employer contributions	47
Benefit payments	48
In-house assets	
Equities	9
Fixed income	20
Short term	1
Alternative investments	
International equities	40
Private placements	15
Real estate equity	14
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	54%
Bonds	40%
Cash equivalents	5%
Real estate equity	1%

NEW YORK — As of Sept. 30, total employee benefit assets of the Church Pension Fund (Episcopal) decreased 1.2% to $1.47 billion from $1.488 billion a year earlier.

Equity managers: Domestic — Alliance and J.P. Morgan.

International — J.P. Morgan.

Fixed-income managers: Domestic — Alliance and J.P. Morgan.

International — J.P. Morgan.

Real estate manager: J.P. Morgan.

The master trustee is J.P. Morgan.

Key personnel overseeing the investment management of the fund are Robert A. Robinson, president, and Eric T. Lexow, senior vice president.

Exxon Corp.

	($ millions)
Total assets	7,609
Defined benefit	3,498
Thrift or savings/401(k)	4,026
ESOP	85
Employer contributions	93
Benefit payments	340
In-house assets	
Equities	920
Fixed income	226
Short term	39
Passive investments	
Indexed stocks	1,717
Indexed bonds	396
Alternative investments	
International equities	320
Venture capital	70
Oil and gas	33
Real estate equity	370
Mortgage-backed securities	114
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	61%
Bonds	14.8%
Cash equivalents	1%
Real estate equity	10%
Mortgage-backed securities	3.2%
Annuities	9%
Other	1%

NEW YORK — As of Sept. 30, Exxon Corp.'s total employee benefit assets decreased 10.5% to $7.609 billion from $8.505 billion a year earlier. Defined benefit assets decreased 11.8% during the same period, to

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$3.498 billion from $3.965 billion and thrift or savings 401(k) plan assets increased 2.4% to $4.026 billion from $3.933 billion.

Equity managers: Sanford C. Bernstein; Fidelity Management Trust; Horsley Keogh; Trinity Investment; and Wells Fargo.

International — State Street Bank.

Fixed-income managers: Chase Investors; Lehman; State Street Research.

Real estate managers: Aetna; Corporate Property Investors; Equitable; NCNB; and Prudential.

Insured reserves managers: Aetna; Equitable; John Hancock; Prudential; and Travelers.

Royalties managers: First City National Bank of Houston and Louisiana National Bank.

The master trustee is Irving Trust; the global custodian is State Street Bank.

Key personnel overseeing the investment management of the fund are W. Allen Harrison, assistant treasurer; James E. Bayne, manager-trust and benefits finance; and Jonathan P. Mason, staff financial analyst.

F

Federal Retirement Thrift Investment Board

	($ millions)
Total assets	2,271
Defined contribution	2,271
Employer contributions	440
Benefit payments	31
Defined contribution asset mix	
Stocks	0.2%
Bonds	0.1%
Cash equivalents	99.7%

WASHINGTON — As of Sept. 30, the 18-month-old Federal Retirement Thrift Investment Board's total employee benefit assets increased 209% to $2.271 billion from $736 million a year earlier. All of the assets are in a defined contribution plan.

The master custodians are the U.S. Treasury Department and Wells Fargo Bank.

Key personnel overseeing the investment management of the fund are Peter B. Mackey, director-investments; Alison L. Doone, deputy director-investments; and Monica L. Spaulding, financial analyst.

Federated Department Stores Inc.

	($ millions)
Total assets*	1,810

*P&I Age estimate

CINCINNATI — As of June 30, Federated Department Stores Inc.'s total employee benefit assets increased to $1.81 billion with the addition of Allied Stores' pension fund, according to *Pensions & Investment Age* estimates.

According to Money Market Directory, the investment managers for the plans were:

Managers: Boston Safe; Chancellor; CIGNA; Cooke & Bieler; General American Investors; Harris Associates; Jundt/Capen; Loomis, Sayles; Mackay-Shields; Mellon Capital; The New England; Northern Trust; Payden & Rygel; Sit Investment; TCW; and Wells Fargo.

The master trustees for Federated's plans are Boston Safe Deposit and Northern Trust; the master custodian for Allied Stores' profit-sharing plan is Manufacturers Hanover. Rogers, Casey and Barksdale is the consultant.

Key personnel overseeing the investment management of the fund are Susan M. Brakers, assistant treasurer, and Jim Tobin, director-retirement plans.

Florida State Board of Administration

	($ millions)
Total assets*	14,411
Defined benefit	14,411
Employer contributions	1,328
Benefit payments	588

*as of June 30, 1988

In-house assets:	
Equities	2,277
Fixed income	5,444
Short term	534
Other	7
Passive investments:	
Indexed stocks	3,320
GICs	71
Alternative investments:	
Private placements	47
Real estate equity	577
Mortgage-backed securities	1,400
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	41.8%
Bonds	37.7%
Cash equivalents	6.3%
Real estate equity	4%
Mortgage-backed securities	9.7%
GICs	0.5%

TALLAHASSEE, Fla. — As of June 30, the Florida State Board of Administration's total pension assets increased 5.2% to $14.411 billion from $13.7 billion a year earlier.

Equity managers: Fred Alger; Alliance; Ariel; Barnett Banks; Barrow, Hanley; Bear, Stearns; Delaware; Denver; Eagle; IDS Growth; INVESCO Capital; Lazard Corporate Partners; Lazard Freres; Prudential Asset; Stein Roe; Sun Banks; Wells Fargo; and Westwood.

Fixed-income manager: Alliance.

Real estate managers: Aetna; Equitable; First Chicago; Goldman, Sachs; John Hancock; JMB; LaSalle; Lehndorff & Babson; and Prudential.

Citicorp is the master and global custodian; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Cliff Hinkle, executive director; William O'Bell, chief of management policy; and Lan Janecek, chief of equities.

Ford Motor Co.

	($ millions)
Total assets	19,650
Defined benefit	15,100
Thrift or savings/401(k)	3,800
TRASOP	750
Employer contributions	1,000
Benefit payments	1,000
In-house assets:	
Fixed income	1,000
Passive investments:	
Indexed stocks	2,500
Indexed bonds	200
GICs	1,500
Alternative investments:	
International equities	500
International bonds	260
Venture capital	50
Oil and gas	25
Real estate equity	500
Mortgages	25
Mortgage-backed securities	250
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	57%
Bonds	28.3%
Real estate equity	3%
Mortgage-backed securities	1.7%
GICs	10%
Defined contribution asset mix:	
Stocks	10%
Cash equivalents	6%
GICs	25%
Company stock	59%

DEARBORN, Mich. — As of Sept. 30, Ford Motor Co.'s total employee benefit assets decreased 0.8% to $19.65 billion from $19.8 billion a year earlier. Defined benefit assets decreased 3.8% during the same period, to $15.1 billion from $15.7 billion. The thrift or savings/401(k) plan assets increased 11.8%, to $3.8 billion from $3.4 billion.

Equity managers: Alliance; Ariel; Sanford C. Bernstein; Capital Guardian; Chase Investors; Concord; Dewey Square; Dreman; Fidelity; Manufacturers National; Mitchell Hutchins; J.P. Morgan; PRIMECAP; Fayez Sarofim; and State Street Research.

Fixed-income managers: Capital Guardian; Dewey Square; J.P. Morgan; T. Rowe Price; Sarofim; State Street Research; and Wells Fargo.

Real estate managers: Aetna; Bank of Boston; CIGNA; Equitable; JMB; LaSalle; J.P. Morgan; NCNB; Public Storage; Sentinel; and TCW.

The master trustee is Manufacturers National Bank of Detroit.

Key personnel overseeing the investment management of the fund are P.E. Sharp, assistant treasurer, and M.E. Maertens, manager-trust investments.

FPL Group Inc.

	($ millions)
Total assets	1,803
Defined benefit	1,231
Defined contribution	161
Thrift or savings	411
Employer contributions	0
Benefit payments	17
Passive investments:	
Indexed bonds	195
Alternative investments:	
International equities	56
Real estate equity	82
Defined benefit asset mix:	
Stocks	65.3%
Bonds	25.7%
Cash equivalents	1.8%
Real estate equity	7.2%
Defined contribution asset mix:	
Stocks	71%
Bonds	29%

NORTH PALM BEACH, Fla. — As of Sept. 30, total employee benefit assets of FPL Group Inc., formerly Florida Power & Light, increased 3.3% to $1.803 billion from $1.746 billion a year earlier. Defined benefit assets increased 1.6% during the same period, to $1.231 billion from $1.212 billion. Thrift savings plan assets increased 14.5% to $411 million from $359 million.

Equity managers: Domestic — General American; J.P. Morgan; Roanoke; Fayez Sarofim; Donald Smith; and Wells Fargo.

International — J.P. Morgan and RCB Trust.

Fixed-income managers: Wells Fargo and Western Asset.

Real estate managers: CFCL; JMB; John McMahan; and RREEF.

The master trustee is First Wachovia; the investment consultant is Rogers Casey & Barksdale.

Key personnel overseeing the investment management of the fund are Robert R. Sears, treasurer; and Robert L. McGrath, manager.

G

GenCorp Inc.

	($ millions)
Total assets	1,683
Defined benefit	1,388
Thrift or savings/401(k)	284
ESOP	11
Employer contributions	na
benefit payments	na
In-house assets	983

FAIRLAWN, Ohio — As of Sept. 30, GenCorp Inc.'s total employee benefit assets decreased 5.3% to $1.683 billion from $1.777 billion a year earlier. Defined benefit assets decreased 0.6% during the same period, to $1.388 billion from $1.396 billion.

Equity managers: J.P. Morgan; Round Hill; and Wilkens & Nanovic.

Fixed-income managers: J.P. Morgan; Round Hill; and Wilkens & Nanovic.

Real estate managers: Landauer and RREEF.

Master custodians are First National Bank of Ohio, Bank of America and the International Trust Co. of Canada.

Key personnel overseeing the investment management of the fund are John O'Neil, chairman-investment boards; Robert M. Smith, vice chairman-investment boards; and Phyllis M. Chelovitz, member-investment boards.

General Dynamics Corp.

	($ millions)
Total assets	5,000
Defined benefit	3,300
Defined contribution	1,700
Employer contributions	115
Benefit payments	100
In-house assets:	
Equities	330
Fixed income	1,390
Short term	160
Other	120
Passive investments:	
Indexed stocks	230
Indexed bonds	240
GICs	120
Alternative investments:	
Mortgage-backed securities	115
Defined benefit asset mix:	
Stocks	36.5%
Bonds	46.4%
Cash equivalents	10%
GICs	3.6%
Mortgage-backed securities	3.5%
Defined contribution asset mix:	
Stocks	11.5%
Bonds	19.5%
GICs	59.2%
Company stock	9.8%

ST. LOUIS — As of Sept. 30, General Dynamics Corp.'s total employee benefit assets increased 4.2% to $5 billion from $4.8 billion a year earlier. Defined benefit assets increased 3.1% during the same period, to $3.3 billion from $3.2 billion. Defined contribution assets increased 6.3%, to $1.7 billion from $1.6 billion.

Equity managers: Alliance; Ardsley Partners; Daniel Breen; Campbell Advisors; Delaware Investment; Jennison Associates; Lazard Freres; Miller, Anderson; J.P. Morgan; Rosenberg Institutional; SASCO; Trinity Investment; and Wells Fargo.

Fixed-income managers: Bank IV; Centerre Trust; and Discount Advisers.

GIC managers: Aetna; Equitable; Hancock; and Travelers.

The master trustee is Chase Manhattan Bank.

Key personnel overseeing the investment management of the fund are Charles D. Walbrandt, staff vice president-trust investment operation; and Rebecca J. Roesch, manager-trust investment operation.

General Electric Co.

	($ millions)
Total assets	25,300
Defined benefit	21,100
Thrift or savings/401(k)	4,100
ESOP	100
In-house assets:	
Equities	8,400
Fixed income	5,200
Short term	1,900
Other	4,000
Passive investments:	
Indexed stocks	3,700
Dedicated/immunized	2,000
GICs	600
Alternative investments:	
International equities	1,200
International bonds	700
Venture capital	300
Private placements	1,400
Real estate equity	1,900
Mortgages	400
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	46%
Bonds	26%
Cash equivalents	9%
Real estate equity	9%
Mortgages	1.9%
Other	8.1%
Defined contribution asset mix:	
Stocks	33%
Bonds	66%
Cash equivalents	1%

STAMFORD, Conn. — As of Sept. 30, General Electric Co.'s total employee benefit assets decreased 7.3% to $25.3 billion from $27.3 billion a year earlier. Defined benefit assets decreased 4.5% during the same period to $21.1 billion from $22.1 billion, and thrift or savings/401(k) plan assets dropped 12.8% to $4.1 billion from $4.7 billion.

Ninety-two percent of the defined benefit assets are managed internally by GE Investment Corp. External managers are used in selected areas but GE declined to identify them.

The master custodian of the GE plan is Chase Manhattan; master trustee of the RCA plan is Bankers Trust. The global custodian is Chase Manhattan.

Key personnel overseeing the investment management of the fund are D.F. Frey, vice president and treasurer of GE Co. and chairman of the board and president of GEIC; A.S. Bahr, executive vice president-equity investments; and J.H. Myers, executive vice president-fixed income and corporate investments.

General Motors Corp.

	($ millions)
Total assets	37,600
Defined benefit	32,500
Thrift or savings/401(k)	4,900
Other	200
Employer contributions	na
Benefit payments	na

Largest union funds

Fund	Assets $ millions
Teamsters, Central States	8,469
Teamsters, Western	8,000
UMWA	4,700
Nat'l Electrical/IBEW	3,045
Boilermaker Blacksmith	2,128
Hospital & Healthcare Workers	1,888
Bakery & Confectionery	1,849
Int'l Operating Engineers	1,832
Plumbers, Nat'l Headquarters	1,658
Southern California UFCW	1,464
IAM Nat'l	1,438
Sheet Metal Workers	1,406
Total	37,879

NEW YORK — As of Sept. 30, General Motors Corp.'s total employee benefit assets decreased 6% to $37.6 billion from $40 billion a year earlier. Defined benefit assets decreased 6.9% during the same period, to $32.5 billion from $34.9 billion. Thrift or savings/401(k) plan assets remained the same at $4.9 billion.

Managers: ABD International; Aetna; Aldrich Eastman & Waltch; American National Bank/Chicago; Ameritrust; Associated Capital; Bankers Trust; Baring America; Baring International; Barrow, Hanley; Batterymarch; BEA; Beekman; Boston Co. Energy; Boston Co. Real Estate; Capital Guardian; Chase Manhattan; Citibank; Daiwa International; Delaware; Dimensional Fund; Fidelity International; Fidelity Management; First National Bank/Boston; First Chicago; NCNB Texas; Franklin Portfolio; Frontier Capital; G.T. Capital; Harris Trust; Hill Samuel; W.R. Huff; INVESCO Capital; Jennison; Kleinwort Benson; Landauer; Lazard Freres; Lehman; Lincoln Capital; MacKay-Shields; Magten; Mellon Bank; Merrill Lynch; Metropolitan Life; Morgan Grenfell Investment; Morgan Guaranty; Morgan Stanley Asset; National Bank/Detroit; Nomura Capital; Provident Investment; Prudential Insurance; R.P.I. Institutional; Rowe Price-Fleming; N.M. Rothschild; Schroder Capital; Solomon Asset; TCW Asset; United Capital; Value Line Asset; Weiss Peck & Greer; Wells Fargo Bank; and WorldInvest.

The master trustees are Bankers Trust, Chase Manhattan and Mellon; the global custodian is Chase.

Key personnel overseeing the investment management of the fund are W. Gordon Binns Jr., vice president and chief investment funds officer, and R. Charles Tschampion, director-investment manager relations.

Employees' Retirement System of Georgia

	($ millions)
Total assets	2,945
Defined benefit	2,945
Employer contributions	164
Benefit payments	111
In-house assets	
Equities	1,108
Fixed income	1,594
Short term	234
Other	9
Passive investments	
Indexed stocks	89
Private placements	76
Real estate equity	2
Mortgages	7
Defined benefit asset mix	
Stocks	38%
Bonds	54%
Cash equivalents	8%

ATLANTA — As of Sept. 30, the Employee's Retirement System of Georgia's total employee benefit assets increased 6.3% to $2.945 billion from $2.77 billion a year earlier. All assets are defined benefit.

Equity advisers: First Wachovia; INVESCO; and Thorndike, Doran, Paine & Lewis.

The master trustee is First Wachovia.

Key personnel overseeing the investment management of the fund are Rudolph Johnson, director, and C.W. Cary, director-division of investment services.

Trading practices and procedures: April 3.

Georgia Teachers Retirement System

	($ millions)
Total assets	7,525
Defined benefit	7,525
Employer contributions	426
Benefit payments	284
In-house assets	
Equities	2,966
Fixed income	4,079
Short term	461
Other	19
Passive investments	
Indexed stocks	478
Alternative investments	
Private placements	215
Real estate equity	2
Mortgages	12
Defined benefit asset mix	
Stocks	40%
Bonds	54%
Cash equivalents	6%

ATLANTA — As of Sept. 30, the Georgia Teachers Retirement System's total employee benefit assets increased 6.3% to $7.525 billion from $7.08 billion a year earlier. All assets are defined benefit.

Equity advisers: Atlanta Capital; Citizens & Southern; INVESCO Capital; Thorndike, Doran, Paine & Lewis; and Wall, Patterson, Hamilton & Allen.

The master custodian is Citizens & Southern.

Key personnel overseeing the investment management of the fund are C.W. Cary, director, and Nancie H. Boedy, assistant director.

Goodyear Tire & Rubber Co.

	($ millions)
Total assets	1,728
Defined benefit	1,476
401(k)	252
Employer contributions	66
Benefit payments	94
Passive investments	
Indexed stocks	135
Alternative investments	
International bonds	9
Private placements	154
Real estate equity	63
Mortgages	42
Hedging devices	
Stock index futures	Y
Fixed income futures	Y
Defined benefit asset mix	
Stocks	50.5%
Bonds	19.4%
Cash equivalents	17.4%
Real estate equity	4.4%
Mortgages	2.8%
Annuities	5.5%

AKRON, Ohio — As of Sept. 30, The Goodyear Tire & Rubber Co.'s total employee benefit assets decreased 3.1% to $1.728 billion from $1.783 billion a year earlier. Defined benefit assets decreased 3.3% during the same period, to $1.476 billion from $1.527 billion. The 401(k) plan assets increased 29.2%, to $252 million from $195 million.

Equity managers: Bankers Trust, Concord, Dillon, Read, Nicholas, Prudential Asset, State Street Research, TCW, and United Capital.

Fixed-income managers: Desai Capital, Duff & Phelps, Equitable Life, Loomis, Sayles, Metropolitan Life, J.P. Morgan, Prudential Asset, and Travelers.

Real estate managers: J.P. Morgan and Prudential Asset.

The master custodian is Northern Trust, the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Oren G. Shaffer, group executive vice president; George R. Hargreaves, vice president and treasurer; and Duane H. Smith, manager-benefit controls and investments.

Grumman Corp.

	($ millions)
Total assets	2,810
Defined benefit	1,900
Thrift or savings	910
Employer contributions	0
Benefit payments	70
In-house assets	
Equities	750
Fixed income	750
Short term	300
Alternative investments	
Venture capital	20
LBOs	20
Real estate equity	95
Mortgage-backed securities	150
Defined benefit asset mix	
Stocks	40%
Bonds	32%
Real estate equity	5%
Mortgage-backed securities	8%
Defined contribution asset mix	
Stocks	10%
Bonds	6%
GICs	53%
Company stock	31%

BETHPAGE, N.Y. — As of Sept. 30, Grumman Corp.'s total employee benefit assets increased 0.4% to $2.81 billion from $2.8 billion a year earlier. Defined benefit assets decreased 2.6% during the same period to $1.9 billion from $1.95 billion. Thrift savings plan assets increased 7.1%, to $910 million from $850 million.

Real estate managers: CIGNA, Equitable Life, Prudential, Sentinel.

The master trustee is Bank of New York.

The key person overseeing the investment management of the fund is W.R. Parmentier, assistant treasurer and investment manager.

Global institutional investing trends: May 1

GTE Corp.

	($ millions)
Total assets	10,596
Defined benefit	9,016
Thrift or savings	102
401(k)	1,478
Employer contributions	89
Benefit payments	312
In-house assets	
Equities	536
Fixed income	1,514
Passive investments	
Indexed stocks	1,525
Indexed bonds	1,514
Alternative investments	
International equities	780
International bonds	360
Venture capital	139
Oil and gas	56
LBOs	189
Real estate equity	176
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	65%
Bonds	23%
Cash equivalents	10%
Real estate equity	2%
Defined contribution asset mix	
Stocks	13%
Bonds	3%
GICs	42%
Company stock	42%

STAMFORD, Conn. — As of Sept. 30, GTE Corp.'s total employee benefit assets decreased 4.2% to $10.596 billion from $11.065 billion a year earlier. Defined benefit assets decreased 6.7% during the same period, to $9.016 billion from $9.668 billion. The 401(k) plan assets increased 13.3% to $1.478 billion from $1.305 billion a year earlier.

Equity managers: Domestic — Baker, Nye; Bankers Trust; BMI; Cashman, Farrell; Chancellor; Concord; Darien Capital; Eagle; First Manhattan; First Pacific; Forest; Franklin Portfolio; Frontier; General American; GeoCapital; GTE Investment; John Hancock; Hellman, Jordan; Hotchkis and Wiley; Oppenheimer; Pacific Financial; Provident Investment; Rampart; Richter, Donald Smith; Webster; and Weiss Peck & Greer.

International — Bankers Trust; Baring, Grantham, Mayo, Van Otterloo, Morgan Guaranty; Rowe Price-Fleming; and Wertheim-Philippe.

Fixed-income managers: Domestic — Baring America; GTE Investment; PIMCO; Security Capital; and Solomon.

International — Beutel, Goodman and WorldInvest.

Real estate managers: Citibank; GTE Investment; Manufacturers National Bank; Morgan Guaranty; State Street Bank; and TCW.

Other managers: Chase Investors; Citibank; Forest; GTE Investment; Hancock; Investment Reserves; and TCW.

The master trustee and global custodian is Bankers Trust.

Key personnel overseeing the investment management of the GTE Corp. fund are:

John B. Carroll, president, GTE Investment; Pamela W. McCann, vice president-pension fund management, GTE Investment; and Stephen Weidemann, vice president-fixed income investment, GTE Investment.

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Halliburton Co.

	($ millions)
Total assets	1,965
Defined contribution	1,965
Employer contributions	60
Benefit payments	135
Hedging devices	
Bond options	Y
Fixed-income futures	Y
Defined contribution asset mix	
Stocks	26%
Bonds	21%
Cash equivalents	3%
GICs	43%
Company stock	4%
Real estate mortgages	3%

DUNCAN, Okla. — As of Sept. 30, Halliburton Co.'s total employee benefit assets decreased 2.9% to $1.965 billion from $2.023 billion a year earlier. All assets are in a defined contribution plan.

The master trustee is NCNB Texas; the global custodian is Chase; the investment consultant is SEI.

The key person overseeing the investment management of the fund is Nathaniel H. Duffield, investment committee chairman.

Employees' Retirement System, State of Hawaii

	($ millions)
Total assets*	3,495
Defined benefit	3,495
Employer contributions	134
Benefit payments	195
*as of June 30, 1988	
In-house assets	
Equities	86
Fixed income	53
Short-term	152
Other	583
Passive investments	
Indexed stocks	228
GICs	86
Alternative investments	
International equities	492
Real estate equity	121
Mortgages	376
Mortgage-backed securities	7
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	41.7%
Bonds	23%
Cash equivalents	15.7%
Real estate equity	3.7%
Mortgages	11.3%
GICs	2.6%

HONOLULU — As of June 30, the Employees' Retirement System of the State of Hawaii's total employee benefit assets increased 2.8% to $3.495 billion from $3.4 billion a year earlier. All of the assets are defined benefit.

Equity managers: Domestic — Alliance; Barrow, Hanley, Cadinha; Delaware; Denney & Denney; Hanson; INVESCO; McCowan; Mellon Capital; and Denis Wong.

International — Daiwa; Nikko; Nomura; and Schroder Capital.

Fixed-income managers: Lehman, PIMCO, Scudder, Stevens, Security Pacific; and Wentworth, Hauser and Violich.

Real estate managers: Aetna, CIGNA and Metropolitan.

The master and global custodian is Irving Trust; the investment consultants are SEI and Callan.

Key personnel overseeing the investment management of the fund are Stanley Siu, executive secretary, and David Shimabukuro, assistant secretary.

Hercules Inc.

	($ millions)
Total assets	1,589
Defined benefit	1,279
Defined contribution	1
401(k)	309
Employer contributions	18
Benefit payments	70
Passive investments	
Indexed stocks	35
Indexed bonds	35
Dedicated immunized	368
GICs	92
Alternative investments	
International equities	173
Real estate equity	120
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	50.6%
Bonds	31.5%
Cash equivalents	1.3%
Real estate equity	9.4%
GICs	7.2%
Defined contribution asset mix	
GICs	100%

WILMINGTON, Del. — As of Sept. 30, Hercules Inc.'s total employee benefit assets decreased 0.8% to $1.589 billion from $1.603 billion a year earlier. Defined benefit assets decreased 4.3% during the same period, to $1.279 billion from $1.336 billion; 401(k) plan assets grew 16.6% to $309 million from $265 million.

Equity managers: Domestic — Capital Guardian; Cooke & Bieler; Lazard Freres; Marvin & Palmer; Mellon Capital; and J.P. Morgan.

International — Fidelity International; Marvin & Palmer; J.P. Morgan; and Warburg.

Fixed-income managers: R.C. Brown and J.P. Morgan.

Real estate managers: Aetna; Equitable; and Prudential.

Other managers: Bankers Trust; Aetna; Equitable; The New England; and Travelers.

The master trustee is Bankers Trust; the global custodian is Chase Manhattan; the investment consultant is Frank Russell Co.

The key person overseeing the investment management of the fund is John R. Long, director-investments.

Hewlett-Packard Co.

	($ millions)
Total assets*	1,606
Defined benefit	224
Defined contribution	158
Profit-sharing	1,224
Employer contributions	167
Benefit payments	na
*From Money Market Directory	

PALO ALTO, Calif. — According to the 1989 Money Market Directory, Hewlett-Packard Co. had total employee benefit assets of $1.606 billion as of mid-1988. That represents an increase of 4.3% from the $1.54 billion *Pensions & Investment Age* estimated the company had as of Sept. 30, 1987.

All the 1988 information came from MMD.

Managers: Capital International; G.T. Capital; Jennison; J.P. Morgan; Morgan Grenfell; Oeschle; PRIMECAP; Wells Fargo; and Wilshire.

The master trustee is Harris Trust.

Key personnel overseeing the fund are Robert E. Greeley, manager-corporate investments, and Elizabeth Obershaw, research manager.

Honeywell Inc.

	($ millions)
Total assets	2,539
Defined benefit	1,860
401(k)	679
Employer contributions	12
Benefit payments	119
Passive investments	
Indexed stocks	501
Indexed bonds	58
GICs	57
Alternative investments	
International equities	84
International bonds	58
Venture capital	63
Oil and gas	36
LBOs	79
Private placements	97
Real estate equity	244
Hedging devices	
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	37.3%
Bonds	26.8%
Cash equivalents	6.1%
Real estate equity	13.1%
GICs	3.1%
Other	13.6%

MINNEAPOLIS — As of Sept. 30, Honeywell Inc.'s total employee benefit assets increased 10.4% to $2.539 billion from $2.299 billion a year earlier. Defined benefit assets decreased 0.9% during the same period, to $1.86 billion from $1.877 billion. The 401(k) plan assets increased 60.9%, to $679 million from $422 million.

Equity managers: Domestic — Alliance Capital; Forstmann-Leff; GAMCO; and Jundt/Capen.

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International — Baring International and IDS International.

Fixed-income manager: Fischer, Francis, Trees & Watts.

Chase Manhattan is master trustee and global custodian; Rogers, Casey & Barksdale is the investment consultant.

Key personnel overseeing the investment management of the fund are D.W. Veverka, director-pension investments; J.T. Wangard, manager-pension investments; and J.K. Skelley, pension fund administrative specialist.

National Pension Fund for Hospital & Health Care Employees

	($ millions)
Total assets	1,888
Defined benefit	1,888
Employer contributions	67
Benefit payments	39
Passive investments	
Indexed stocks	603
Indexed bonds	778
Alternative investments	
International bonds	9
Mortgage-backed securities	70
Defined benefit asset mix	
Stocks	32%
Bonds	47%
Cash equivalents	21%
Mortgage-backed securities	1%

NEW YORK — As of Sept. 30, the National Pension Fund for Hospital and Health Care Employees's total employee benefit assets increased 5.1% to $1.888 billion from the $1.797 billion *Pensions & Investment Age* had estimated a year earlier.

Equity managers: Amalgamated Bank, Irving Trust, and Prudential Asset.

Fixed-income managers: Amalgamated Bank, Irving Trust, and Prudential Asset.

Real estate manager: Prudential.

The master trustee is Irving Trust. The investment consultant is Jack Marco Group.

Key personnel overseeing the investment management of the fund are A.D. Cadenatori, chairperson; H. Nicholas, first vice chairperson; and M. Shields, second vice chairperson.

Houston Retirement System

	($ millions)
Total assets	1,458
Defined benefit	1,458
Employer contributions	na
Benefit payments	na

HOUSTON — As of Sept. 30, the Houston Retirement System's total employee benefit assets decreased 2.8% to $1.458 billion from $1.5 billion June 30, 1987. All assets are defined benefit.

According to the 1989 Money Market Directory, the system has the following managers:

Investment managers: A&M Capital Management; AIM; Alliance; Analytic Investment Management; Balch, Hardy & Scheinman; Benchmark; Capital Technology; Coldwell Banker; Criterion; Eagle Realty; Eaton, Vance; Gulf Investment; IDS Advisory; IDS Financial; IDS International; Investment Advisers; JMB; Lehndorff & Babson; Loomis, Sayles; MacKay-Shields; Market Research; Mellon Capital; Merus; PSI; Siebel; Standish, Ayer; Sun Bank; TCW Realty; Texas Commerce Bank; and Trinity.

The investment consultant is SEI.

Key personnel overseeing the investment management of the fund are George E. Cones Jr., chairman-firefighters fund; Cliff Tuttle, chairman-municipal employees fund; and Dalton Baskin, chairman-police officers fund.

Hughes Aircraft Co.

	($ millions)
Total assets	5,136
Defined benefit	3,336
Thrift or savings	1,800
Employer contributions	50
Benefit payments	150
In-house assets	
Equities	600
Fixed income	300

LOS ANGELES — As of Sept. 30, Hughes Aircraft Co.'s total employee benefit assets were $5.136 billion. Defined benefit assets were $3.336 billion; thrift/savings plan assets, $1.8 billion.

According to the 1989 Money Market Directory, the managers are:

Investment managers: BEA; Chase Investors; CNA; Coldwell Banker; Dillon, Read; Equitec; Forstmann-Leff; Frontier; G.T. Capital; Hagler, Mastrovita & Hewitt; Jennison; JMB; MacKay-Shields; McKenzie, Walker; Mellon Capital; Neuberger and Berman; Oxford Partners; T. Rowe Price; PRIMCO; PRIMECAP; Public Storage; RCM; Reich & Tang; Richards & Tierney; Rowe Price-Fleming; RREEF; TCW Asset; and Trust Co. of the West.

The master trustee is Bankers Trust.

The key person overseeing the investment management of the fund is W.A. Reed, staff vice president-investments.

A report on funding retiree health-care benefits will be in the May 29 issue.

IAM National Pension Fund

	($ millions)
Total assets	1,438
Defined benefit	1,436
Defined contribution	2
Employer contributions	65
Benefit payments	81
Passive investments	
Indexed stocks	86
Indexed bonds	262
Alternative investments	
Real estate equity	44
Defined benefit asset mix	
Stocks	43%
Bonds	49%
Cash equivalents	5%
Real estate equity	3%
Defined contribution asset mix	
Cash equivalents	100%

WASHINGTON — As of Sept. 30, the IAM National Pension Fund's total employee benefit assets decreased 1.1% to $1.436 billion from $1.454 billion a year earlier. Defined benefit assets decreased 1.2% during the same period, to $1.436 billion from $1.454 billion. Defined contribution assets increased 71%, to $2 million from $1.17 million, as of Dec. 31, 1987.

Equity managers: Dodge & Cox; Lazard Freres; State Street Bank; and Stein Roe.

Fixed-income managers: Dodge & Cox; Lazard Freres; State Street Bank; and Stein Roe.

Real estate manager: National Bank of Washington.

The master trustee is State Street Bank.

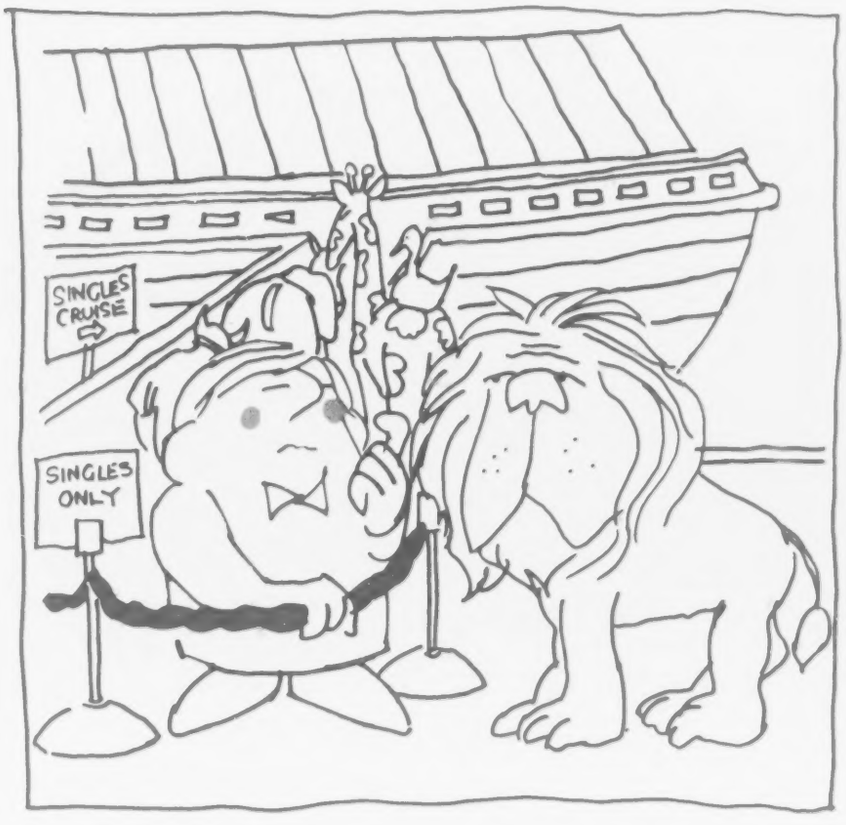
The key person overseeing the investment management of the fund is Alan W. Skolnick, fund director.

IBM Corp.

	($ millions)
Total assets	21,761
Defined benefit	19,332
401(k)	2,429
Employer contributions	100
Benefit payments	536
In-house assets	11,000
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

STAMFORD, Conn. — As of Sept. 30, IBM Corp.'s total employee benefit assets decreased 3.1% to $21.761 billion from $22.457 billion a year earlier. Defined benefit assets decreased 3.8% during the same period, to $19.332 billion from $20.101 billion. 401(k) plan assets increased 3.1% to $2.429 billion from $2.356 billion.

Equity managers: Domestic — Alliance; Butler; Chancellor; Columbus Circle; Delaware; Dimensional Fund; Dillon, Read; Emerging Markets Growth Fund; Fidelity Management Trust; Forstmann Little; John Hancock Venture; Independence Investment; Jennison; Lincoln Capital; RFS; Re-



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source Investors; Sasco; Solomon; TCW Asset; Warburg Pincus; and Wellington.

International — G.T. Capital; Matuschka; Oechsle; Rowe Price-Fleming; and State Street Bank.

Fixed-income managers: Domestic — BEA; Discount Corp. of New York; Fischer, Francis; Hoisington; Lincoln Capital; Miller, Anderson; and PIMCO.

International — Morgan Guaranty and WorldInvest.

Real estate managers: Cabot, Cabot, Dreyfus; Equitable; and Prudential.

The master trustee and global custodian is Chase Manhattan Bank; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are J. Grills, assistant treasurer; W.V. Hoyt, director-investment strategy; and A.M. Shagory, director-investment research and operations.

Illinois Municipal Retirement Fund

	($ millions)
Total assets	3,591
Defined benefit	3,591
Employer contributions	141
Benefit payments	146
In-house assets	
Short term	191
Passive investments	
Indexed stocks	364
Alternative investments	
International equities	72
International bonds	104
Venture capital	38
Real estate equity	290
Mortgage-backed securities	100
Hedging devices	
Bond options	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	50%
Bonds	33.7%
Cash equivalents	0.7%
Real estate equity	8.2%
Mortgage-backed securities	7.3%
Venture capital	1%

CHICAGO — As of Sept. 30, the Illinois Municipal Retirement Fund's defined benefit assets increased 1.6% to $3.591 billion from $3.536 billion a year earlier.

Equity managers: Domestic — American National-Chicago; Campbell, Cowperthwait; Dillon Read; Dimensional; Fidelity Management Trust; Lincoln Capital; and Provident Investment.

International — Baring; Nomura; and Schroder.

Fixed-income managers: Domestic — Criterion; Fidelity Management Trust; Neuberger and Berman; and Payden & Rygel.

International — Julius Baer.

Real estate managers: First Chicago; JMB; LaSalle; Sentinel; and TCW.

Venture capital managers: Abbott, First Chicago; Lanmar-Centennial; and Oxford.

The master trustee is Harris Trust; the global custodian is Mitsubishi Bank; the investment consultants are Mercer-Meidinger-Hansen and Institutional Property Consultants.

Key personnel overseeing investment management of the fund are Robert L. Cusma, executive director; Hiroshige Mori, director-investments; and Walter J. Kozlol, investment manager.

Illinois State Board of Investment

	($ millions)
Total assets*	2,700
Defined benefit	2,700
Employer contributions	26
Benefit payments	0
*as of June 30, 1988	
In-house assets	
Equities	388
Fixed income	860
Short term	72
Alternative investments	
International equities	38
Venture capital	19
LBOs	37
Real estate equity	254
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	43.4%
Bonds	42.2%
Cash equivalents	2.7%
Real estate equity	9.6%
Other	2.1%

CHICAGO — As of June 30, assets of the Illinois State Board of Investment increased 3.9% to $2.7 billion from $2.6 billion a year earlier. All assets are in defined benefit plans.

Equity managers: Ariel; Cooke & Bieler; Disciplined; Fidelity Management; Lazard Freres; Lincoln; Newbold's; Templeton International; Trinity; and TCW.

Fixed-income managers: Calamos; Delaware; Fidelity Management; and J.P. Morgan.

Real estate managers: Aetna; First Chicago; Heitman; JMB; Public Storage; TCW; and VMS.

Venture capital managers: Frontenac; Golder Thoma Cressey; Hancock; Menlo; and Prudential.

LBO managers: Corporate Partners and KKR.

The master custodian is Northern Trust; the investment consultant is Callan Associates.

Key personnel overseeing the investment management of the fund are Gregory C. Nagle, director; Larry G. Darlington, fixed-income portfolio manager; and Bruce L. Poznak and Scott S. Pape, equity portfolio managers.

Illinois Teachers' Retirement System

	($ millions)
Total assets	7,043
Defined benefit	7,043
Employer contributions	na
Benefit payments	na
Passive investments	
Indexed stocks	1,700
Indexed bonds	400
Alternative investments	
International equities	500
International bonds	50
Venture capital	50
Real estate equity	650
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

SPRINGFIELD, Ill. — As of Sept. 30, the Illinois Teachers' Retirement System's total employee benefit assets decreased 0.1% to $7.043 billion from $7.053 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Alliance; American National Bank, Chicago; Ariel; Cedar Hill; and Kemper.

International — Kemper-Murray Johnstone and State Street Bank.

Fixed-income managers: Domestic — Bear Stearns; Dreyfus Management; Marine Investment; PIMCO; and State Street Bank.

International — First Chicago.

Real estate managers: Bennett & Kahnweiler; F.I.A.; First Chicago; JMB; Jones Lang Wootton; and TCW.

Currency managers: Matuschka Moser and N.M. Rothschild International.

Venture capital: Frontenac.

The master trustee is Harris Trust; the investment consultant is Callan.

The key person overseeing the investment management of the fund is William M. Stephens, chief investment officer.

State Universities Retirement System of Illinois

	($ millions)
Total assets	3,080
Defined benefit	3,080
Employer contributions	83
Benefit payments	174
Passive investments	
Indexed stocks	1,000
Indexed bonds	265
GICs	10
Alternative investments	
International equities	212
Other international	60
Real estate equity	408
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	55%
Bonds	31%
Cash equivalents	1%
Real estate equity	13%

CHAMPAIGN, Ill. — As of Sept. 30, the State Universities Retirement System of Illinois' defined benefit assets increased 2.1% to $3.08 billion from $3.016 billion a year earlier.

Equity managers: Domestic — Batterymarch; PIMCO; Fayez Sarofim; and Wells Fargo.

International — Wells Fargo.

Fixed-income managers: PIMCO and Wells Fargo.

Real estate managers: Aetna; Equitable; JMB; and RREEF.

The master custodian is Northern Trust; the global custodian is Wells Fargo; the investment consultant is Ennis, Knupp.

Key personnel overseeing the investment management of the fund are Kenneth Codlin, investment officer, and Joanne Valcik, associate investment officer.

Public Employees' Retirement Fund (Indiana)

	($ millions)
Total assets*	2,927
Defined benefit	2,927
Employer contributions	215
Benefit payments	139
*as of June 30, 1988	
Passive investments	
Indexed bonds	317
Alternative investments	
Private placements	1
Real estate equity	4
Mortgage-backed securities	221
Defined benefit asset mix	
Bonds	84.3%
Cash equivalents	8%
Real estate equity	0.1%
Mortgage-backed securities	7.6%

INDIANAPOLIS — As of June 30, the Public Employees' Retirement Fund of Indiana's total employee benefit assets increased 35.6% to $2.927 billion from $2.158 billion on Sept. 30, 1987. All the assets are defined benefit, and include $514 million in an employee contributory plan listed last year as a defined contribution plan.

Fixed-income managers: Bank One Indianapolis; Indiana National Bank; Lehman; T. Rowe Price; and Prime Capital.

Key personnel overseeing the investment management of the fund are L.H. Earle II, executive secretary; Donal D. Bayne, controller; and Michael A. Cherry, chief information officer.

Indiana State Teachers Retirement Fund

	($ millions)
Total assets	1,500
Other	1,500
Employer contributions	200
Benefit payments	200
Defined contribution asset mix	
Bonds	90%
Cash equivalents	10%

INDIANAPOLIS — As of Sept. 30, the Indiana State Teachers Retirement Fund's total employee benefit assets increased 15.4% to $1.5 billion from $1.3 billion a year earlier. All of the assets are in an annuity purchase plan.

The master trustee is Indiana National Bank.

The key person overseeing the investment management of the fund is Robert D. Newland, investment officer.

Inland Steel Industries Inc.

	($ millions)
Total assets	1,700
Defined benefit	1,400
401(k)	300
Employer contributions	10
Benefit payments	100
Passive investments	
Indexed stocks	40
Dedicated/immunized	428
GICs	90
Alternative investments	
International equities	125
Venture capital	5
Real estate equity	106
Mortgage-backed securities	68
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	46.3%
Bonds	23%
Cash equivalents	12.1%
Real estate equity	7.3%
Mortgage-backed securities	4.9%
GICs	6.4%
Defined contribution asset mix	
Stocks	4%
GICs	87%
Company stock	9%

CHICAGO — As of Sept. 30, Inland Steel Industries Inc.'s total employee benefit assets decreased 7.6% to $1.7 billion from $1.84 billion a year earlier. Defined benefit assets decreased 11.4% during the same period, to $1.4 billion from $1.581 billion, while 401(k) plan assets increased 15.8%, to $300 million from $259 million.

Equity managers: Domestic — Sanford Bernstein; Chancellor; Dillon, Read; Dimensional Fund; First Chicago Investment; INVESCO Capital; Oppenheimer; Putnam Advisory; State Street Research; and Waddell & Reed.

International — Baring International; First Chicago; and Putnam International.

Fixed-income manager: Lincoln.

Real estate managers: Equitable; JMB; and Prudential.

The master trustee and global custodian is Northern Trust; the investment consultant is DeMarche.

Key personnel overseeing the investment management of the fund are J.E. Dittus, treasurer; R.J. Schutter, director-pension investments and administration; and V.L. Avril, manager-pension investments.

Largest defined contribution plans*
($ millions)

Fund	Assets
TIAA-CREF	67,141
AT&T	5,851
General Motors	4,900
E.I. du Pont de Nemours	4,842
Sears, Roebuck	4,509
General Electric	4,100
Exxon	4,026
Ford Motor	3,800
Shell Oil	3,390
Boeing	3,255
Procter & Gamble	2,953
IBM	2,429
Rockwell Int'l	2,361
Federal Thrift Board	2,271
Lockheed	2,259
NYNEX	2,139
Halliburton	1,965
Eastman Kodak	1,925
Chevron	1,920
Mobil Oil	1,810
Hughes Aircraft	1,800
Texas Municipal	1,800
Texas County & District	1,789
Allied-Signal	1,776
Total	134,811

*Includes profit sharing, thrift/savings and 401(k) plans

International Paper Co.

	($ millions)
Total assets	2,252
Defined benefit	1,851
Defined contribution	401
Employer contributions	14
Benefit payments	80
Passive investments	
GICs	46
Alternative investments	
International equities	60
Real estate equity	135
Mortgages	2
Mortgage-backed securities	4
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	59%
Bonds	16%
Cash equivalents	15%
Real estate equity	7%
GICs	3%
Defined contribution asset mix	
Cash equivalents	1%
GICs	15%
Company stock	84%

PURCHASE, N.Y. — As of Sept. 30, International Paper Co.'s total employee benefit assets decreased 9.9% to $2.252 billion from $2.5 billion a year earlier. Defined benefit assets decreased 7.5% during the same period, to $1.851 billion from $2 billion. Defined contribution assets decreased 19.8%, to $401 million from $500 million.

Equity managers: Domestic — Avatar; Sanford Bernstein; Geewax Terker; Investment Counselors of Maryland; Manning & Napier; Martingale; Miller Anderson & Sherrerd; Neuberger & Berman; Provident Investment; Roll & Ross; TCW; and United Capital.

International — Oechsle and TCW.

Fixed-income managers: J.P. Morgan; PIMCO; and State Street Research.

Real estate managers: Aldrich, Eastman & Waltch; LaSalle and RREEF.

Other manager: TSA.

The master trustees are State Street Bank for the defined benefit plan and Bankers Trust for the defined contribution plan; the global custodian is State Street Bank.

Key personnel overseeing the investment management of the fund are Myra R. Drucker, director-trust investments; Connie R. Caperella, manager-portfolio analysis; and John C. Winchester, manager-trust investments.

Iowa Public Employees Retirement System

	($ millions)
Total assets*	3,800
Defined benefit	3,800
Employer contributions	197
Benefit payments	na
*From Money Market Directory	

DES MOINES, Iowa — According to Money Market Directory, assets of the Iowa Public Employees' Retirement System totaled $3.8 billion as of June 30. All assets are in defined benefit plans.

The following information also was reported by Money Market Directory.

Equity managers: Batterymarch; Invista Capital Management; Mellon Capital Management; Prudential; and RCM Capital Management.

Fixed-income managers: Boston Co.; Criterion Investment Management; Loomis, Sayles, Miller, Anderson & Sherrerd; and J.P. Morgan.

Real estate managers: Aldrich, Eastman & Waltch; Copley; Heitman; JMB; and Wellington.

Venture capital managers: Cable & Howse; Interven; Invest America; KKR; Lawrence, Tyrrell; Steinberg Lyman; and Summit.

Other managers: Golder, Thoma and The New England.

The master custodian is Boston Safe Deposit & Trust; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Dennis Jacobs, deputy administrator; Larry Thompson, investment officer; and Maurice Baringer, administrator.

ITT Corp.

	($ millions)
Total assets	2,602
Defined benefit	1,871
Profit-sharing/thrift-savings	731
Employer contributions	na
Benefit payments	na
Alternative investments	
International equities	183
International bonds	91
Oil and gas	10
LBOs	15
Real estate equity	108
Defined benefit asset mix	
Stocks	57%
Bonds	23%
Cash equivalents	12%
Real estate equity	8%
Defined contribution asset mix	
Stocks	9%
Cash equivalents	4%
GICs	55%
Company stock	32%

NEW YORK — As of Sept. 30, ITT Corp.'s total employee benefit assets decreased 13.7% to $2.602 billion from $3.015 billion a year earlier. Defined benefit assets decreased 11.3% during the same period, to $1.871 billion from $2.109 billion. Profit-sharing and thrift or savings plan assets decreased 2.4%, to $731 million from $749 million.

Equity managers: Domestic — Alliance; American Fund; Barrow, Hanley; First Manhattan; GAMCO; Jennison; and Verus Capital.

International — Alliance International; Capital Guardian; G.T. Capital; and Lazard Freres.

Fixed-income managers: Domestic — Alliance; J.P. Morgan; and State Street Research.

International — J.P. Morgan and WorldInvest.

Real estate managers: Coldwell; Corporate Property; Equitable; Metropolitan; and RREEF.

LBO managers: Blackstone; Corporate Advisors; KKR; and Kohlberg & Co.

Other managers: Alex. Brown; Butler Capital; and Morgan.

The master trustee is The Northern Trust Co.; the global custodian is Northern Trust London.

Key personnel overseeing the investment management of the fund are Edwin J. Ehrlich, director-pension fund trust; and Eileen C. Leahy, manager-pension fund trust.

K

Kansas Public Employees Retirement System

	($ millions)
Total assets	3,175
Defined benefit	3,175
Employer contributions	88
Benefit payments	129
In-house assets:	
Fixed income	60
Short term	105
Other	10
Alternative investments:	
International equities	218
Other international	76
Private placements	353
Real estate equity	266
Mortgage-backed securities	51
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix:	
Stocks	38.8%
Bonds	34.5%
Cash equivalents	18.6%
Real estate equity	6.5%
Mortgage-backed securities	1.6%

TOPEKA, Kan. — As of Sept. 30, the Kansas Public Employees Retirement System's total employee benefit assets decreased 4.1% to $3.175 billion from $3.311 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Capital Supervisors; Investment & Capital; Market Research & Management; Pilgrim Baxter; Provident Investment; and Reimer & Koger.

International — Alliance and Nomura.

Fixed-income managers: Domestic — Loomis, Sayles; PIMCO; and Peters, Gamm & West.

International — Julius Baer.

Real estate manager: J.W. O'Connor.

Cash manager: Payden & Rygel.

Securities lending: Domestic — Marine Midland Bank.

International — Bankers Trust.

The master custodian is Commerce Bank & Trust; the global custodian is Bankers Trust; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Marshall Crowther, executive secretary; and Thomas A. Hammill, chairman-board of trustees.

Kentucky Retirement Systems

	($ millions)
Total assets	2,500
Defined benefit	2,500
Employer contributions	110
Benefit payments	92
In-house assets:	
Equities	301
Fixed income	30
Short term	442
Passive investments:	
Indexed stocks	301
Alternative investments:	
Real estate equity	91
Mortgage-backed securities	406
Defined benefit asset mix:	
Stocks	34%
Bonds	29%
Cash equivalents	17%
Real estate equity	4%
Mortgage-backed securities	16%

FRANKFORT, Ky. — As of Sept. 30, Kentucky Retirement Systems' total employee benefit assets decreased 2.2% to $2.5 billion from $2.556 billion a year earlier. All assets are defined benefit.

Equity manager: Capital Supervisors.

Fixed-income managers: Capital Supervisors and Munder Capital.

Real estate manager: Heitman.

The master trustee is Farmer Bank & Capital Trust; the investment consultant is Mercer Meidinger Hansen.

The key person overseeing the investment management of the fund is Bobby J. McKee, general manager.

Kentucky Teachers' Retirement System

	($ millions)
Total assets*	2,840
Defined benefit	2,840
Employer contributions	187
Benefit payments	170
*as of June 30, 1988	
In-house assets:	
Fixed income	208
Alternative investments:	
Real estate equity	41
Mortgages	109
Mortgage-backed securities	166
Defined benefit asset mix:	
Stocks	20.2%
Bonds	53.4%
Cash equivalents	15.2%
Real estate equity	1.5%
Mortgages	3.8%
Mortgage-backed securities	5.9%

FRANKFORT, Ky. — As of June 30, Kentucky Teachers' Retirement System's total employee benefit assets increased 6.93% to $2.84 billion from $2.656 billion a year earlier. All of the assets are in a defined benefit plan.

Equity managers: INVESCO and Todd Investment.

Fixed-income managers: First Kentucky and Todd Investment.

The master custodian is Farmers Bank & Capital Trust.

Key personnel overseeing the investment management of the fund are Pat N. Miller, executive secretary; Stuart A. Reagan, deputy executive secretary; and Paul L. Yancey, investment analyst.

K mart Corp.

	($ millions)
Total assets*	1,509
Defined benefit	931
401(k)	578
Employer contributions	0
Benefit payments	34
*as of June 30, 1988	
In-house assets:	
Fixed income	131
Short term	18
Passive investments:	
Indexed stocks	124
GICs	191
Alternative investments:	
Real estate equity	49
Hedging devices:	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix:	
Stocks	51%
Bonds	14%
Cash equivalents	7%
Real estate equity	5%
GICs	21%
Annuities	2%
Defined contribution asset mix:	
Stocks	8%
GICs	50%
Company stock	42%

TROY, Mich. — As of June 30, K mart Corp.'s total employee benefit assets decreased 6.9% to $1.509 billion from $1.62 billion Sept. 30, 1987. Defined benefit assets decreased 4% during the same period, to $931 million from $970 million. 401(k) plan assets decreased 11.1% to $578 million from $650 million.

Equity managers: Alliance; Avatar; Capital Guardian; Dimensional Fund; and Stein Roe.

Real estate managers: Equitec and JMB.

Other: Boston Co.

The master trustee is National Bank of Detroit.

Key personnel overseeing the investment management of the fund are John A. Steinbach, assistant treasurer-investment manager, and William F. Camp, assistant investment manager.

Kraft Inc.

	($ millions)
Total assets	1,600
Defined benefit	1,182
Thrift or savings	428
Employer contributions	30
Benefit payments	60
Passive investments:	
Indexed stocks	78

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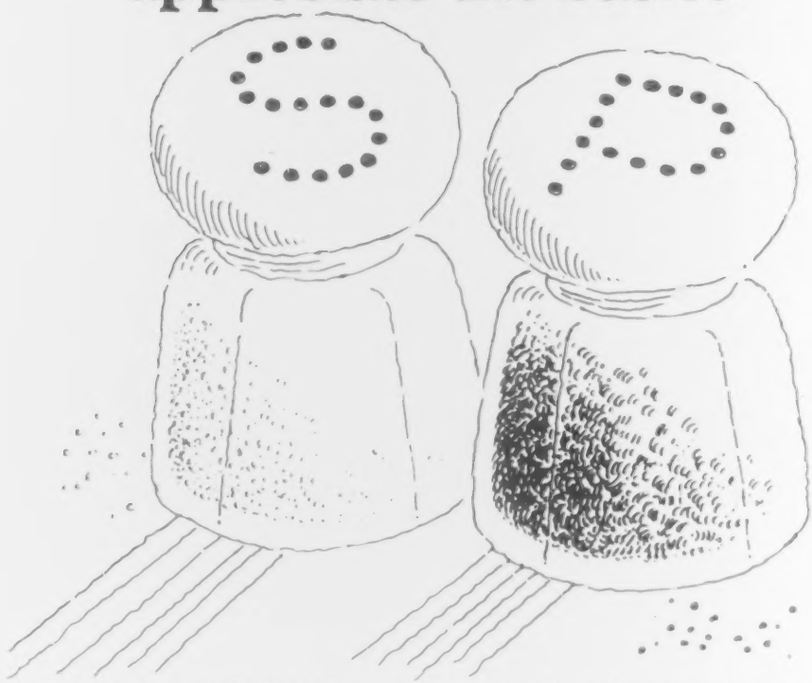

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GICs	188
Alternative investments	
International equities	120
Venture capital	13
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	59%
Bonds	23%
Cash equivalents	1%
GICs	16%
Venture capital	1%
Defined contribution asset mix	
Stocks	7%
GICs	83%
Company stock	10%

GLENVIEW, Ill. — As of Sept. 30, Kraft Inc.'s total employee benefit assets decreased 6% to $1.608 billion from $1.71 billion a year earlier. Defined benefit assets decreased 10.9% during the same period, to $1.182 billion from $1.327 billion, and thrift plan assets increased 21.7% to $426 million from $350 million.

Equity managers: Domestic — Bankers Trust; BEA; First Pacific; Neuberger & Berman; Ruane Cunniff; and Thorndike Doran.

International — Mellon-Pictet and Morgan Grenfell.

Fixed-income managers: Bankers Trust and Fischer Francis.

IPG manager: John Hancock.

The master trustee and global custodian is Bankers Trust.

Key personnel overseeing the investment management of the fund are Alice M. Peterson, assistant treasurer-corporate finance; and Michael L. Keesey, manager-corporate finance.

L

Eli Lilly & Co.

	($ millions)
Total assets	1,867
Defined benefit	1,089
401(k)	778
Employer contributions	69
Benefit payments	52
In-house assets	
Equities	70
Passive investments	
Indexed stocks	180
Dedicated/immunized	74
Alternative investments	
International equities	70
Venture capital	10
Real estate equity	59
Mortgage-backed securities	17
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	69.1%
Bonds	12.1%
Cash equivalents	11.9%
Real estate equity	5.4%
Mortgage-backed securities	1.5%
Defined contribution asset mix	
Stocks	10.8%
Cash equivalents	1.4%
GICs	33.9%
Company stock	53.9%

INDIANAPOLIS — As of Sept. 30, Eli Lilly & Co.'s total employee benefit assets decreased 0.4% to $1.867 billion from $1.875 billion a year earlier. Defined benefit assets decreased 4.1% during the same period, to $1.089 billion from $1.135 billion. The 401(k) plan assets increased 5.1%, to $778 million from $740 million.

Equity managers: Domestic — Ardsley; Capital Guardian; Mellon Capital; Reams; W.H. Reaves; and United Capital.

International — Nikko and Nomura.

Fixed-income managers: Bank One, Indianapolis; Northern Investment; and Reams.

Real estate managers: First Wachovia; JMB; and RREEF.

Cash and asset allocation: Northern Investment.

The master trustee is Northern Trust.

Key personnel overseeing the investment management of the fund are James M. Cornelius, chief financial officer and chairman of the fund advisory committee; Michael S. Hunt, treasurer and secretary of the fund advisory committee; and Frederick W. Ruebeck, director of investments.

The leading international managers will be profiled in the June 26 issue.

Lockheed Corp.

	($ millions)
Total assets*	7,113
Defined benefit	4,854
Defined contribution	2,259
Employer contributions	na
Benefit payments	na

*P&I Age estimate

CALABASAS, Calif. — As of Sept. 30, *Pensions & Investment Age* estimates Lockheed Corp.'s total employee benefit assets decreased 11.4% to $7.113 billion from $8.025 billion a year earlier. Defined benefit assets decreased 12.1% during the same period, to $4.854 billion from $5.523 billion. Defined contribution assets decreased 9.7%, to $2.259 billion from $2.502 billion.

Managers: Alliance; Anhalt/O'Connell; Bankers Trust; Batterymarch; Capital Guardian; Chase Investors; Chancellor Trust; Delaware Investment; DSI International; First Interstate Bank of Washington; Forstmann-Leff; Thomas L. Karsten; Investment Research Co.; Lombard Odier International; Mellon Bank; J.P. Morgan; Payden & Rygel; RREEF; SBC Portfolio; Security Pacific; Smith Barney; TCW Asset; Western Asset; Westwood; and Wright Investment.

Bankers Trust is the master trustee and global custodian.

The key person overseeing the investment management of the fund is George C. Weintz, investment counsel.

Los Angeles City Employees' Retirement System

	($ millions)
Total assets	2,193
Defined benefit	2,193
Employer contributions	133
Benefit payments	144
In-house assets	
Short term	175
Passive investments	
Indexed stocks	215
Defined benefit asset mix	
Stocks	38%
Bonds	54.1%
Cash equivalents	7.9%

LOS ANGELES — As of Sept. 30, Los Angeles City Employees' Retirement System total employee benefit assets increased 4.4% to $2.193 billion from $2.101 billion a year earlier. All assets are defined benefit.

Equity managers: Alliance; Ariel; Bankers Trust; Loomis Sayles; Security Pacific; and Westwood.

Fixed-income managers: Chemical Investment; Loomis, Sayles; and Westwood.

The master custodian is Irving Trust; the investment consultant is SEI Corp.

Key personnel overseeing the investment management of the fund are Jerry Bardwell, manager; Oscar Peters, assistant manager; and Daniel P. Gallagher, investment officer.

Los Angeles County Employees' Retirement Association

	($ millions)
Total assets	8,744
Defined benefit	8,221
Thrift or savings	25
401(k)	78
Other	420
Employer contributions	377
Benefit payments	350
In-house assets	
Fixed income	70
Passive investments	
Indexed stocks	424
Alternative investments	
International equities	806
Other international	78
Venture capital	88
Private placements	70
Real estate equity	171
Mortgages	119
Mortgage-backed securities	264
Defined benefit asset mix	
Stocks	40.4%
Bonds	34.8%
Cash equivalents	17%
Real estate equity	2.1%
Mortgages	1.4%
Mortgage-backed securities	3.2%
Other	1.1%

LOS ANGELES — As of Sept. 30, Los Angeles County Employees' Retirement Association total employee benefit assets increased 5.8% to $8.744 billion from $8.262 billion on June 30, 1987. Defined benefit assets increased 4.4% during the same period, to $8.221 billion from $7.875 billion, while defined contribution assets increased 30% to $420 million from $323 million.

Equity managers: Domestic — Capital Guardian; Loomis, Sayles; Massachusetts Financial; Morgan Stanley Asset; Pacific Century; Pilgrim, Baxter; Putnam; Security Pacific; Stein, Roe; and Weiss, Peck & Greer.

International — Brown Brothers Harriman; Capital Guardian; Chase; Daiwa; Morgan Grenfell; and Warburg.

Fixed-income managers: Brown Brothers Harriman; Capital Guardian; CMB; Criterion; Massachusetts Financial; and J.P. Morgan.

Real estate managers: Equitable; Goldman, Sachs; Heitman; JMB; Prudential; Public Storage; Sentinel; Shurgard; TCW Realty; and Trammell Crow.

Other managers: Copley Venture; GKH Partners; Prudential Venture; TA Associates; and Warburg, Pincus.

The master custodian is Security Pacific National Bank; the global custodian is Chase Manhattan; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Norman S. Johnson, chairman-board of investments; C.L. Spencer, retirement administrator; and C.F. Conrad, assistant retirement administrator.

Los Angeles Fire & Police Pension System

	($ millions)
Total assets	2,774
Defined benefit	2,774
Employer contributions	288
Benefit payments	256
In-house assets	
Short term	90
Passive investments	
Indexed stocks	459
Alternative investments	
Real estate equity	53
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	54.4%
Bonds	33.1%
Cash equivalents	10.5%
Real estate equity	2%

LOS ANGELES — As of Sept. 30, the Los Angeles Fire & Police Pension System's total employee benefit assets increased 1% to $2.774 billion from $2.744 billion a year earlier. All assets are defined benefit.

Equity managers: Alliance; Amerindo U.S.; BMI; Frontier Capital; Husic; Loomis, Sayles; Security Pacific; Target Investors; and Wright Investors.

Fixed-income managers: Boston Co.; Magten; Security Pacific; and Solomon Asset.

Real estate managers: Boston Co.; Equitable; JMB; Prudential; and Sentinel.

Options managers: Balch, Hardy & Scheinman; MCO; and Oppenheimer.

The master and global custodian is Bankers Trust; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Gary Mattingly, general manager; Allan Moore, assistant general manager; and Dennis Sugino, chief investment officer.

Water & Power Employees' Retirement Plan (of Los Angeles)

	($ millions)
Total assets*	1,504
Defined benefit	1,504
Employer contributions	116
Benefit payments	95

*as of June 30, 1988

In-house assets	
Short term	82
Alternative investments	
Private placements	29
Mortgage-backed securities	136
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	37%
Bonds	46%
Cash equivalents	6%
Mortgage-backed securities	9%
Private placements	2%

LOS ANGELES — As of June 30, the Water & Power Employees' Retirement Plan's total benefit assets increased 2.3% to $1.504 billion from $1.47 billion a year earlier. All of the assets are defined benefit.

Balanced managers: Bank of California; Boston Co.; and TCW.

Options managers: Boston Co. and TCW.

The master trustee is Security Pacific.

Key personnel overseeing the investment management of the fund are Richard W. Goss, retirement plan manager; Kathleen Thornton, assistant retirement plan manager; and Clarence Brown, investment officer.

Louisiana State Employees' Retirement System

	($ millions)
Total assets	2,001
Defined benefit	2,001
Employer contributions	133
Benefit payments	233
In-house assets	
Equities	5
Fixed income	480
Short term	40
Alternative investments	
International equities	1
Private placements	20
Real estate equity	34
Mortgage-backed securities	120
Defined benefit asset mix	
Stocks	28%
Bonds	50%
Cash equivalents	12%
Real estate equity	2%
Mortgage-backed securities	6%
Other	2%

BATON ROUGE, La. — As of Sept. 30, the Louisiana State Employees' Retirement System's total employee benefit assets increased 2.9% to $2.001 billion from $1.944 billion as of June 30, 1987. All of the assets are defined benefit.

Equity managers: Boston Co.; Eagle; and Merus.

Fixed-income managers: Denver Investment; Duff & Phelps; INVESCO.

Real estate managers: Equitable; Metropolitan Life; Public Storage; and Security Pacific.

The master trustee is Irving Trust; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are Vernon L. Strickland, chief investment officer; Nicholas P. Montagnino Jr., investment officer; and Calla E. McManus, investment officer.

Teachers' Retirement System of Louisiana

	($ millions)
Total assets*	2,833
Defined benefit	2,833
Employer contributions	208
Benefit payments	350

*as of June 30, 1988

In-house assets	
Short term	566
Alternative investments	
Mortgage-backed securities	270
Defined benefit asset mix	
Stocks	25%
Bonds	45%
Cash equivalents	20%
Mortgage-backed securities	10%

BATON ROUGE, La. — As of June 30, total employee benefit assets of the Teachers' Retirement System of Louisiana increased 3.4% to $2.833 billion from $2.741 billion as of Sept. 30, 1987. All assets are defined benefit.

Equity managers: Boston Co.; Eagle; INVESCO; and Sun Bank.

Fixed-income managers: Centerre; Criterion; Hibernia; Massachusetts Financial; and Scudder, Stevens & Clark.

The master custodian is City National Bank of Baton Rouge; the in-

Top 300 funds with defined benefit assets invested in:

Indexed stocks

Fund	Assets $ millions
New York State & Local	12,596
New York State Teachers	9,517
California State Teachers	9,290
AT&T	8,170
New York City	7,853
NYNEX	nn4,114
California Public Employees	4,109
General Electric	3,700
Florida State Board	3,320
Teamsters, Central States	2,673
Ford Motor	2,500
Minnesota State Board	2,385
Maryland State	1,809
Virginia Supplemental	1,735
Exxon	1,717
Illinois Teachers	1,700
Pennsylvania State Employes	1,681
Washington State Board	1,671
Southwestern Bell	1,661
E.I. du Pont de Nemours	1,531
GTE	1,525
Pennsylvania Public School	1,224
Deere	1,000
Illinois State Universities	1,000
North Carolina Systems	989
Arizona State	932
Unisys	917
Teamsters, Western	860
Sears, Roebuck	776
Connecticut Trust Funds	700
Tennessee Valley Authority	697
S. New England Telephone	660
Ohio School Employees	658
Ameritech	650
Utah State	620
Alabama Systems	603
Hospital & Healthcare Workers	603
Bell Atlantic	600
Prudential Insurance	573
Nevada Public Employees	556
Caterpillar	550
Honeywell	501
UMWA	500
United Technologies	500
Georgia Teachers	478
Raytheon	470
Int'l Operating Engineers	464
Los Angeles Fire & Police	458
Mississippi Public Employees	452
Los Angeles County	424
Tenneco	400
Pacific Gas & Electric	398
RJR Nabisco	383
Nat'l Electric Contractors/IBEW	373
Illinois Municipal	364
Chrysler	356
San Francisco Employees	348
Colorado Public Employees	327
World Bank	320
Kentucky Retirement	301
Allied-Signal	300
UAL	275
United Methodist Church	262
Digital Equipment	259
General Dynamics	230
Ohio Police & Firemen	228
Hawaii State Employees	226
Los Angeles City Employees	215
Maine State	209
Armco	205
Texas Employees	201
Mass. Teachers & Employees	200
State of Delaware	197
Commonwealth Edison	196
BP America	191
Amoco	183
Eli Lilly	180
Sun	171
American Electric Power	164
Travelers Insurance	155
Army & Air Force Exchange	153
State of Michigan	150
Mobil Oil	138
Goodyear Tire & Rubber	137
K mart	124
Chevron	120
Southern California UFCW	120
Nat'l Rural Electric Co-op	108
Philip Morris	100
Philadelphia Municipal	93
Georgia Employees	89
IAM Nat'l	86
Kraft	78
Southern California Edison	75
Alaska Retirement Systems	71
Bakery & Confectionery	65
Milwaukee City Employes	51
Detroit Systems	45
CIGNA	44
New York Life	41
Inland Steel Industries	40
Motorola	36
Hercules	35
American Stores	17
Phillips Petroleum	15
Total	114,311

vestment consultant is SEI.

Key personnel overseeing the investment management of the fund are Jennifer Netterville, investment officer, and Carleton C. Page, director-secretary treasurer.

Board of Pensions Evangelical Lutheran Church in America

	($ millions)
Total assets	1,420
Defined contribution	1,420
Employer contributions	53
Benefit payments	42
In-house assets	
Equities	297
Fixed income	222
Short term	73
Passive investments	
Indexed stocks	44
Defined contribution asset mix	
Stocks	19%
Bonds	55%
Cash equivalents	6%

MINNEAPOLIS — As of Sept. 30, total employee assets of the Board of Pensions of the Evangelical Lutheran Church in America were $1.419 billion. All assets are in a defined contribution plan. The figures represent a merger of the American Lutheran Church, the Lutheran Church in America and the Association of Evangelical Lutheran Churches.

Equity managers: Loomis, Sayles and Merrill Lynch.

Fixed-income manager: Baring America.

Short-term manager: Boston Safe.

The master trustee is Boston Safe.

Key personnel overseeing the investment management of the fund are Glenn H. Steinke, vice president-investments; Michael L. Troutman, manager-social purpose funds and systems; Paul Tim Kaspar and William E. Gruszewski, equity portfolio managers, and Christopher C. Berberet and Lynne A. McHugh, bond portfolio managers.

M

Maine State Retirement System

	($ millions)
Total assets	1,452
Defined benefit	1,452
Employer contributions	200
Benefit payments	143
Passive investments	
Indexed stocks	209
Alternative investments	
Oil and gas	3
Private placements	24
Real estate equity	23
Defined benefit asset mix	
Stocks	40.4%
Bonds	43.8%
Cash equivalents	11.2%
Real estate equity	1.6%

AUGUSTA, Maine — As of Sept. 30, Maine State Retirement System's total employee benefit assets increased 4.5% to $1.452 billion from $1.39 billion a year earlier.

Equity managers: Alliance; Boston Safe; Dillon Read; Evans & Moxon; Gouws Capital; Maine National Bank.

Fixed-income managers: Alliance; Boston Safe; Massachusetts Financial; Morgan Guaranty; Putnam.

Real estate manager Property Capital.

Other manager: First Reserve Energy.

The master trustee is Boston Safe Deposit; the investment consultant is Wilshire Associates.

Key personnel overseeing the investment management of the fund are Claude R. Perrier, executive director, and William B. Ross, investment account coordinator.

Martin Marietta Corp.

	($ millions)
Total assets	2,829
Defined benefit	2,001
Profit sharing	828
Employer contributions	84
Benefit payments	63
In-house assets	
Equities	160
Fixed income	150
Defined benefit asset mix	
Stocks	20%
Bonds	25%
Cash equivalents	55%
Defined contribution asset mix	
Stocks	23%
GICs	62%
Company stock	15%

BETHESDA, Md. — As of Sept. 30, Martin Marietta Corp.'s total employee benefit assets increased 0.7% to $2.829 billion from $2.809 billion a year earlier. Defined benefit assets decreased 1.1% during the same period, to $2.001 billion from $2.024 billion. Defined contribution assets increased 5.5%, to $828 million from $785 million.

Equity managers: Breau Capital; Capital Guardian; Invista Capital; Pioneering Management; State Street Research; and Robert E. Torray.

Fixed-income managers: T. Rowe Price.

The master trustee is Bankers Trust; the investment consultant is Janney, Montgomery, Scott.

Key personnel overseeing the investment management of the fund are Wayne H. Shaner, assistant treasurer-pension investments; Shawn M. Hendon, director-pension investments; and Wendy J. Thomson, senior financial analyst.

Maryland State Retirement and Pension Systems

	($ millions)
Total assets*	8,717
Defined benefit	8,717
Employer contributions	500
Benefit payments	500
*as of Aug. 31, 1988	
In-house assets	
Equities	1,809
Fixed income	4,888
Short term	161
Passive investments	
Indexed stocks	1,809
Indexed bonds	169
Alternative investments	
Real estate equity	183
Defined benefit asset mix	
Stocks	31.9%
Bonds	65.6%
Cash equivalents	0.4%
Real estate equity	2.1%

BALTIMORE — As of Aug. 30, the Maryland State Retirement and Pension Systems' employee benefit assets increased 5.4% to $8.717 billion from $8.274 billion as of Sept. 30, 1987. All assets are in a defined benefit plan.

Equity managers: Bankers Trust; Capital Guardian; Dimensional Fund Advisors; Hagler, Mastrovita & Hewitt; Investment Counselors of Maryland; Scudder, Stevens; and Wellington Trust.

Fixed-income managers: Investment Counselors of Maryland; Mercantile Safe; PIMCO; and Standish Ayer & Woods.

Real estate managers: CIGNA; Copley; J.P. Morgan; and Sentinel.

The master custodian is First National Bank of Maryland.

Key personnel overseeing the investment management of the fund are Bennett H. Shaver, executive director, and Howard J. France, chief investment officer.

Massachusetts Pensions Reserve Investment Management Board

	($ millions)
Total assets	2,364
Employer contributions	na
Benefit payments	na

BOSTON — As of Sept. 30, the Massachusetts Pensions Reserve Investment Management Board's total employee benefit assets increased 7.4% to $2.364 billion from $2.202 billion a year earlier.

According to the Money Market Directory, the investment managers are:

Managers: Alliance; Bank of Boston; Baring America; Baring International; Bear Stearns; Boston Co.; Boston Financial; Davis Venture; Forstmann Little; Golder, Thoma; Heitman; INVESCO; Hancock Financial; Hancock Venture; KKR; Lazard Freres; Lehman; Lomas Advisors; Massachusetts Mutual; The New England; Oechsle; Putnam; N.M. Rothschild; M.D. Sass; Scudder, Stevens &

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Clark, Southern California Ventures, State Street Bank, T.A. Associates, TCW, Trinity Investment, United States Trust, Boston, and Vista Ventures.

The master custodian is State Street Bank, the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Paul F. Quirk, executive director, and Philip D. Kett, chief investment officer.

Commonwealth of Massachusetts Teachers & Employees Pension Fund

	($ millions)
Total assets	4,000
Defined benefit	4,000
Employer contributions	550
Benefit payments	330
In-house assets	
Fixed income	1,500
Short term	500
Passive investments	
Indexed stocks	200
Indexed bonds	50
GICs	80
Alternative investments	
International equities	50
International bonds	50
LBOs	40
Real estate equity	45
Mortgage-backed securities	100
Defined benefit asset mix	
Stocks	10%
Bonds	42.5%
Cash equivalents	15%
Real estate equity	3%
Mortgage-backed securities	2.5%
GICs	27%

BOSTON — As of Sept. 30, the Commonwealth of Massachusetts Teachers & Employees Pension Fund's total employee benefit assets increased 14.3% to $4 billion from $3.5 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Constitution Capital, Gardner and Preston Moss, Hagler, Mastrovita, Independence Investment, INVESCO and Keystone.

International — Capital Guardian, Scudder, Stevens, and Wellington International.

Fixed-income manager: International — Fiduciary Trust International.

Real estate managers: Aldrich, Eastman & Waltch, State Street Bank, Copley, First Chicago, John Hancock, Lehndorff & Babson, Public Storage, and Sierra Capital.

State Street Bank is master trustee and global custodian.

Key personnel overseeing the investment management of the fund are Robert Q. Crane, treasurer; Richard V. Kelly Sr., assistant treasurer; and Alan West, chief investment officer.

McDonnell Douglas Corp.

	($ millions)
Total assets	6,462
Defined benefit	5,000
Defined contribution	1,462
Employer contributions	na
Benefit payments	na

ST. LOUIS — As of Sept. 30, McDonnell Douglas Corp.'s total employee benefit assets decreased 4.9% to $6.462 billion from $6.8 billion a year earlier. Defined benefit assets decreased 9% during the same period, to $5 billion from $5.5 billion. Defined contribution assets increased 12.4%, to $1.462 billion from $1.3 billion.

McDonnell Douglas declined to provide information on its money managers. According to the 1989 Money Market Directory, the managers are Aetna Capital; Aetna Life; Bankers Trust; Centerre Trust; LaSalle Advisors; Mercury Asset; and TCW Realty.

MMD lists Bankers Trust as master trustee.

Key personnel overseeing the investment management of the fund are David Hammerstein, director-retirement funds management; Sheryl Kwiatek, manager-retirement funds management; and Anthony J. Mangoff, investment analyst.

Metropolitan Life Insurance Co.

	($ millions)
Total assets	3,120
Defined benefit	2,272
Thrift or savings/401(k)	776
Other	72
Employer contributions	26
Benefit payments	143
In-house assets	
Equities	545
Fixed income	1,454
Other	273
Alternative investments	
Real estate equity	273
Defined benefit asset mix	
Stocks	24%
Bonds	64%
Real estate equity	12%
Defined contribution asset mix	
Stocks	17%
Bonds	83%

NEW YORK — As of Sept. 30, Metropolitan Life Insurance Co.'s own employee benefit assets totaled $3.12 billion, virtually unchanged from $3.113 billion a year earlier. Defined benefit assets decreased 2% during the same period, to $2.272 billion from $2.318 billion. The assets of the company's thrift savings plan, which includes a 401(k) option, increased 6.3%, to $776 million from $730 million.

All of the company's employee benefit assets are managed internally.

The key person overseeing the investment management of the fund is Arthur Typermass, treasurer.

State of Michigan Employees' Retirement Systems

	($ millions)
Total assets	15,798
Defined benefit	15,798
Employer contributions	740
Benefit payments	1,329
In-house assets	
Equities	312
Fixed income	1,060
Short term	2,050
Other	676
Passive investments	
Indexed stocks	150
Alternative investments	
Venture capital	228
LBOs	148
Private placements	750
Real estate equity	448
Mortgages	1,074
Mortgage-backed securities	843
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	46%
Bonds	26%
Cash equivalents	13%
Real estate equity	4%
Mortgages	7%
Mortgage-backed securities	5%

LANSING, Mich. — As of Sept. 30, the State of Michigan Employees' Retirement Systems' total employee benefit assets decreased 1.7% to $15.798 billion from $16.073 billion. All assets are defined benefit and managed internally.

The custodian is the Michigan state treasurer.

Key personnel overseeing the investment management of the fund are W.A. Amerman, director of investments; and B.L. Stevens and G.H. Linsday, assistant directors-investments.

City of Milwaukee Employes' Retirement System

	($ millions)
Total assets	1,397
Defined benefit	1,397
Employer contributions	38
Benefit payments	54
Passive investments	
Indexed stocks	51
Dedicated/immunized	168
Alternative investments	
Real estate equity	31
Mortgage-backed securities	80
Defined benefit asset mix	
Stocks	32%
Bonds	49.3%
Cash equivalents	10%
Real estate equity	3%
Mortgage-backed securities	5.7%

MILWAUKEE — As of Sept. 30, the City of Milwaukee Employes' Retirement System's total employee benefit assets increased 3.1% to $1.397 billion from $1.355 billion a year earlier. All assets were in a defined benefit plan.

Equity managers: Alliance; Delaware; INVESCO; and Northern Trust.

Fixed-income managers: Criterion; First Wisconsin; and Loomis, Sayles.

Real estate manager: Frank Russell.

Other manager: State of Wisconsin Investment Board.

The master custodian is First Wisconsin Trust; the investment consultants are SEI and Ennis, Knupp.

Key personnel overseeing the investment management of the fund are Robert G. Nehls, director, and Paul Stawicki, pension accounting specialist.

Minnesota Mining and Manufacturing Co.

	($ millions)
Total assets	2,703
Defined benefit	2,146
401(k)	557
Employer contributions	25
Benefit payments	75
In-house assets	
Fixed income	20
Alternative investments	
International equities	101
International bonds	20
Venture capital	13
LBOs	55
Private placements	210
Real estate equity	152
Mortgages	30
Mortgage-backed securities	50
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	51%
Bonds	25.3%
Cash equivalents	10%
Real estate equity	7%
Mortgages	1.4%
Mortgage-backed securities	2.3%
Other	3%
Defined contribution asset mix	
Stocks	20%
GICs	64%
Company stock	16%

ST. PAUL, Minn. — As of Sept. 30, Minnesota Mining and Manufacturing Co.'s total employee benefit assets decreased 4.9% to $2.703 billion from $2.843 billion a year earlier. Defined benefit assets decreased 10.1% during the same period, to $2.146 billion from $2.387 billion. The 401(k) assets increased 22.1%, to $557 million from $456 million.

Equity managers: Domestic — Alliance; Ashland; Franklin Portfolio; Grantham, Mayo, Van Otterloo; IDS Advisory; Liberty Square; Management Asset; T. Rowe Price; Trinity; TSA; and ValueQuest.

International — Grantham, Mayo, Van Otterloo and Schroder.

Fixed-income managers: Hoisington; Minnesota Mutual; PIMCO; and Sun Life.

Real estate managers: Citibank; Equitable; JMB; RCB Realty; RREEF; Schroder; and TCW.

LBO managers: Forstmann Little and HLM Partners.

Venture capital managers: Oak Ventures and Summit Ventures.

The master trustee and global custodian is Boston Safe; the investment consultant is Lewis Bailey Associates.

Key personnel overseeing the investment management of the fund are Janet L. Yeomans, director; Deborah D. Weiss, manager; and Rajbir S. Kang and David W. Brown, senior analysts.

Minnesota State Board of Investment

	($ millions)
Total assets	10,207
Defined benefit	9,657
Defined contribution	550
Employer contributions	na
Benefit payments	na
In-house assets	
Equities	442
Fixed income	3,608
Short term	276
Passive investments	
Indexed stocks	2,385
Indexed bonds	597
Dedicated/immunized	3,608
Alternative investments	
Venture capital	146
Oil and gas	78
Real estate equity	485
Defined benefit asset mix	
Stocks	35.7%
Bonds	48.6%
Cash equivalents	8.9%
Real estate equity	4.9%
Other	1.9%

ST. PAUL, Minn. — As of Sept. 30, the Minnesota State Board of Investment's total employee benefit assets increased 5.2% to $10.207 billion from $9.706 billion on June 30, 1987. Defined benefit assets increased 3.8% during the same period, to $9.657 billion from $9.305 billion. Defined contribution assets increased 37.2%, to $550 million from $401 million.

Equity managers: Alger; Alliance; BMI; Forstmann-Leff; IDS Advisory; Investment Advisers; Lieber; Waddell and Reed; and Wilshire.

Fixed-income managers: Fidelity Management; Investment Advisers; Lehman; Lincoln Capital; Miller Anderson & Sherrerd; Morgan Stanley Asset; and Western Asset.

Real estate managers: Aetna; Equitable; Heitman; Prudential; RREEF; State Street Bank; and TCW.

Venture capital/LBO managers: Allied Venture; DSV Management; First Chicago; Golder Thoma Cressey; IAI Venture; Inman and Bowman; KKR; Matrix; Norwest; Smith Barney; and Summit Ventures.

Oil and gas managers: Apache; First Reserve; and J.P. Morgan.

The master custodian is State Street Bank; the investment consultant is Richards & Tierney.

Key personnel overseeing the investment management of the fund are Howard J. Bicker, executive director; Beth Lehman, assistant director; and James E. Heidelberg, assistant to the executive director.

Top 200 funds with defined benefit assets invested in:

Indexed bonds

Fund	Assets $ millions
New York City	14,712
California State Teachers	4,633
AT&T	3,867
Teamsters, Central States	2,586
Pennsylvania Public School	1,883
GTE	1,514
NYNEX	1,149
Mississippi Public Employees	1,127
Hospital & Healthcare Workers	778
Int'l Operating Engineers	668
Pennsylvania State Employes	604
Minnesota State Board	597
Washington State Board	570
Ameritech	550
Teamsters, Western Conference	460
UMWA	450
Illinois Teachers	400
Exxon	396
Arizona State Retirement	339
Indiana Public Employees	317
State of Delaware	290
Tenneco	280
Illinois State Universities	265
IAM Nat'l Pension Fund	262
Chevron	256
General Dynamics	240
Ford Motor	200
FPL Group	195
Maryland State Retirement	169
Prudential Insurance	154
Shell Oil	154
Sun	125
Digital Equipment	100
Nat'l Rural Electric Co-op	95
Philadelphia Municipal	86
New York Life	60
Honeywell	58
Mass. Teachers & Employees	50
Travelers Insurance	49
Bakery & Confectionery	45
Nat'l Electrical Contractors/IBEW	40
Hercules	35
Owens-Illinois	19
United Methodist Church	10
Total	40,837

Public Employees' Retirement System of Mississippi

	($ millions)
Total assets	3,336
Defined benefit	3,336
Employer contributions	210
Benefit payments	201
In-house assets	
Short term	75
Passive investments	
Indexed stocks	452
Indexed bonds	1,127
Defined benefit asset mix	
Stocks	25%
Bonds	65%
Cash equivalents	10%

JACKSON, Miss. — As of Sept. 30, the Public Employees' Retirement System of Mississippi's employee benefit assets increased 3.7% from a year earlier, to $3.336 billion from $3.218 billion. All of the assets are defined benefit.

Equity managers: Bankers Trust; Boston Co.; INVESCO; Fayez Sarofim; and Sun Bank.

Fixed-income managers: Criterion; Dreyfus; Lehman; PIMCO; and Wells Fargo Investment.

The master custodian is Trustmark National Bank; the investment consultant is SEI.

Ronald D. Logan, investment manager, oversees the investment management of the fund.

Public School Retirement System of Missouri

	($ millions)
Total assets	4,500
Defined benefit/contribution	4,500
Employer contributions	165
Benefit payments	150
Passive investments	
GICs	6
Alternative investments	
Mortgages	6
Mortgage-backed securities	804
Asset mix	
Stocks	11%
Bonds	58%
Cash equivalents	13%
Mortgage-backed securities	18%

JEFFERSON CITY, Mo. — As of Sept. 30, the Public School Retirement System of Missouri's total employee benefit assets increased 7.1% to $4.5 billion from $4.2 billion as of June 30, 1987. All the assets are in a hybrid defined benefit/defined contribution plan.

Balanced managers: Boatmen's National Bank; Centerre Trust; and United Missouri Investment Counsel.

The master custodian is Boatmen's National; the investment consultant is DeMarche Associates.

The key person overseeing the investment management of the fund is David W. Mustoe, executive secretary.

Mobil Oil Corp.

	($ millions)
Total assets	3,880
Defined benefit	2,070
Defined contribution	1,810
Employer contributions	50
Benefit payments	170
Passive investments	
Indexed stocks	138
Dedicated/immunized	359
Alternative investments	
International equities	20
Mortgage-backed securities	107
Defined benefit asset mix	
Stocks	49%
Bonds	39%
Cash equivalents	7%
Mortgage-backed securities	5%
Defined contribution asset mix	
Stocks	6%
Bonds	1%
Cash equivalents	9%
GICs	35%
Company stock	49%

NEW YORK — As of Sept. 30, Mobil Oil Corp.'s total employee benefit assets decreased 10.5% to $3.88 billion from $4.336 billion a year earlier. Defined benefit assets decreased 8.4% during the same period, to $2.07 billion from $2.26 billion. Defined contribution assets decreased 4.7%, to $1.81 billion from $1.9 billion.

Equity managers: Domestic — Alliance Capital; Capital Guardian; Jennison Associates; Miller, Anderson, Sherrerd; Fayez Sarofim; State Street Research; and Wells Fargo.

International — Capital Guardian.

Fixed-income managers: State Street Research; United States Trust Co. of New York; and Henry Kaufman.

The master trustee for the defined benefit plan is United States Trust Co. of New York, and for the defined contribution plan, Bankers Trust.

Key personnel overseeing the investment management of the fund are Robert B. Hahnen, manager of corporate benefits-finance; Geraldine A. Michalin, assistant manager, corporate benefits-finance; and Patricia A. Pagano, senior financial analyst.

Monsanto Co.

	($ millions)
Total assets	3,990
Defined benefit	3,150
Thrift or savings/401(k)	840
Employer contributions	na
Benefit payments	na
In-house assets	
Fixed income	68

Alternative investments	
International equities	219
Oil and gas	2
Private placements	40
Real estate equity	260
Mortgages	40
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	59%
Bonds	23.7%
Cash equivalents	6%
Real estate equity	10%
Mortgages	1.3%
Defined contribution asset mix	
Stocks	3%
GICs	56%
Company stock	39%
Other	4%

ST. LOUIS — As of Sept. 30, Monsanto Co.'s total employee benefit assets decreased 7.2% to $3.99 billion from $4.3 billion a year earlier. Defined benefit assets decreased 10% during the same period, to $3.15 billion from $3.5 billion. Defined contribution assets increased 5%, to $840 million from $800 million.

Managers: Analytic Investment; Brown Capital; Capital Guardian; Centerre; Chancellor; Martin Currie; Delaware; Equitable Real Estate; Fischer, Francis, Trees & Watts; Hagler, Mastrovita & Hewitt; Hotchkis and Wiley; W.R. Huff; Jennison; J.P. Morgan; Landauer; LaSalle Advisors; Lincoln Capital; Lord Abbett; T. Rowe Price; PRIMECAP; RCM; Rowe Price-Fleming; Security Pacific; Standish, Ayer & Wood; State Street Research; STW; TCW; TCW Realty; RREEF; and Trinity Investment.

The master trustee for the defined benefit plan is Northern Trust; the global custodian is Northern Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are A.E. Wolfarth, assistant treasurer; W.N. Searcy, manager-pension asset management; and W.H. Crabbin, pension analyst.

Motorola Inc.

	($ millions)
Total assets	1,618
Defined benefit	472
Defined contribution	1,146
Employer contributions	na
Benefit payments	na
Passive investments	
Indexed stocks	36
Alternative investments	
International equities	50
Defined benefit asset mix	
Stocks	55%
Bonds	18%
Cash equivalents	13%
Defined contribution asset mix	
Stocks	40%
Bonds	44%
Cash equivalents	16%

SCHAUMBURG, Ill. — As of Sept. 30, Motorola Inc.'s total employee benefit assets increased 19.1% to $1.618 billion from the $1.358 billion reported as of March 31, 1987. Defined benefit assets increased 0.4% during the same period, to $472 million from $470 million. Defined contribution assets increased 29.1%, to $1.146 billion from $888 million.

Equity managers: Domestic — Capital Guardian; Delaware; Jennison; Lehman; and Lincoln Capital.

International — Morgan Grenfell.

Fixed-income managers: Brown Brothers Harriman; Scudder, Stevens & Clark; and Stein Roe & Farnham.

The master trustees are Northern Trust and Harris Trust; the global custodians are Northern Trust and Mitsubishi Bank.

Key personnel overseeing the investment management of the fund are Garth Milne, treasurer, and Martha B. Olson, assistant treasurer-investments.

Pensions & Investment Age welcomes letters to the editor from its readers.

Letters should include name, address and, if applicable, the company of the writer.

The editors reserve the right to edit any letter for reasons of space or clarity.

N

National Electrical Contractors Association/International Brotherhood of Electrical Workers

	($ millions)
Total assets	3,045
Defined benefit	2,906
Defined contribution	139
Employer contributions	108
Benefit payments	95
In-house assets	
Equities	2
Fixed income	496
Short term	96
Other	142
Passive investments	
Indexed stocks	373
Indexed bonds	40
GICs	40
Alternative investments	
Venture capital	10
Real estate equity	137
Mortgages	105
Mortgage-backed securities	68
Defined benefit asset mix	
Stocks	30.7%
Bonds	45%
Cash equivalents	12.2%
Real estate equity	4.7%
Mortgages	3.6%
Mortgage-backed securities	2.4%
GICs	1.4%
Defined contribution asset mix	
Stocks	22.5%
Bonds	30.3%
Cash equivalents	18.4%
GICs	18%
Other	10.8%

WASHINGTON — As of Sept. 30, the National Electrical Contractors Association/International Brotherhood of Electrical Workers' total employee benefit assets increased 9.9% to $3.045 billion from $2.77 billion a year earlier.

Equity managers: ASB Capital; Boston Co.; Chicago Corp.; Columbia Management; Denver Investment; Fidelity Management; IDS Advisory; Loomis, Sayles; Oppenheimer; RCM; and Triangle Portfolio.

Fixed-income managers: ASB Capital and Fidelity Management.

Real estate managers: ASB Capital.

The master trustee and global custodian is Boston Safe Deposit. The consultant is Marco Consulting Group.

Key personnel overseeing investment management of the fund are Roy Dickinson, executive assistant, and Tina Samson, investment manager.

National Rural Electric Cooperative Association

	($ millions)
Total assets	1,982
Defined benefit	1,586
Defined contribution	372
Other	24
Employer contributions	na
Benefit payments	na
In-house assets	
Equities	327
Fixed income	257
Short term	153
Passive investments	
Indexed stocks	106
Indexed bonds	95
Alternative investments	
International equities	99
Mortgage-backed securities	5
Defined benefit asset mix	
Stocks	55%
Bonds	32%
Cash equivalents	13%
Defined contribution asset mix	
Stocks	26%
Cash equivalents	23%
GICs	51%

WASHINGTON — As of Sept. 30, the National Rural Electric Cooperative Association's total employee benefit assets decreased 3.2% to $1.982 billion from $2.048 billion a year earlier. Defined benefit assets decreased 9.2% during the same period, to $1.586 billion from $1.747 billion. Defined contribution assets increased 23.5%, to $373 million from $302 million.

Equity managers: Domestic — Bankers Trust; Barrow, Hanley; C-S Capital; Capital Guardian; and Chesapeake.

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Chicago Board of Trade

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International — Grantham, Mayo, Van Otterloo and J.P. Morgan.

Fixed-income managers: Lincoln Income.

State Street Bank is the master trustee and global custodian.

Key personnel overseeing the investment management of the fund are Peter R. Morris, executive director-investments; Stuart E. Teach, senior equity portfolio manager; and Douglas G. Kern, senior fixed-income portfolio manager.

Navistar International Transportation Corp.

	($ millions)
Total assets	1,785
Defined benefit	1,772
401(k)	13
Employer contributions	187
Benefit payments	242
Passive investments	
Dedicated/immunized	1,772
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Bonds	100%

CHICAGO — As of Sept. 30, total employee benefit assets of Navistar International Transportation Corp., the main unit of Navistar International Corp., increased 11.1% to $1.785 billion from $1.606 billion a year earlier. Defined benefit assets increased 10.8% during the same period, to $1.772 billion from $1.6 billion. 401(k) assets increased 116.7% to $13 million from $6 million.

Fixed-income managers: Jennison and J.P. Morgan.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are Robert C. Lannert, vice president and treasurer, and Terry Endsley, manager-pension and long-term investments.

NCR Corp.

	($ millions)
Total assets	1,343
Defined benefit	1,148
Defined contribution	142
Profit-sharing	53
Employer contributions	na
Benefit payments	na
Alternative investments	
International equities	49
Venture capital	2
Private placements	2
Real estate equity	91
Defined benefit asset mix	
Stocks	56.2%
Bonds	24.9%
Cash equivalents	10.6%
Real estate equity	7.9%
Other	0.4%

DAYTON, Ohio — As of Sept. 30, NCR Corp. had $1.343 billion in total employee benefit assets, of which $1.148 billion comprised defined benefit assets and $142 million, defined contribution assets.

Equity managers: Domestic — Columbus Circle, INVESCO, Newbold's, Trinity.

International — Wells Fargo.

Fixed-income manager: Wells Fargo.

Real estate manager: Equitable.

Tactical asset allocators: Mellon Capital and Wells Fargo.

Venture capital manager: Oxford Partners.

The master trustees are Citibank (defined benefit plan) and State Street Bank (defined contribution); the investment consultant is BARRA.

The key person overseeing the investment management of the fund is the assistant treasurer-benefit plans financing.

Public Employees Retirement System of Nevada

	($ millions)
Total assets	2,682
Defined benefit	2,682
Employer contributions	189
Benefit payments	97
In-house assets	
Other	5
Passive investments	
Indexed stocks	556
Dedicated/immunized	427
Alternative investments	
Other international	96
Venture capital	6
Real estate equity	167
Mortgages	125
Mortgage-backed securities	219
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	40.5%
Bonds	39.8%
Cash equivalents	0.4%
Real estate equity	6.2%
Mortgages	4.7%
Mortgage-backed securities	8.2%
Other	0.2%

CARSON CITY, Nev. — As of Sept. 30, the Public Employees Retirement System of Nevada's total employee benefit assets increased 6.6% to $2.682 billion from $2.515 billion a year earlier. All of the assets are in a defined benefit plan.

Equity managers: Domestic — Alliance, Criterion, Dimensional Fund, INVESCO, Loomis, Sayles, and Wells Fargo.

International — Axe Core.

Fixed-income managers: Criterion, Patterson Capital, Putnam, and State Street Research.

Real estate managers: Heitman, JMB, Karsten Realty, J.P. Morgan, PMRealty, Prudential, and TCW.

Other managers: Balch, Hardy & Scheinmann, Bankers Trust, Bay Partners, Columbine Ventures, Golder, Thoma, Cressey, and Summit Ventures.

The master custodian is Nevada National Bank; the investment consultant is Mercer-Meidinger-Hansen.

Key personnel overseeing the investment management of the fund are Laura B. Wallace, investment officer, and Peggy I. Clark, investment analyst.

New Jersey Division of Investment

	($ millions)
Total assets	20,092
Defined benefit	19,892
Other	200
Employer contributions	800
Benefit payments	400
In-house assets	
Equities	9,229
Fixed income	2,022
Short term	1,972
Other	2,369
Alternative investments	
Private placements	50
Mortgage-backed securities	2,569
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	46.4%
Bonds	15.9%
Cash equivalents	5.4%
Mortgage-backed securities	12.9%
Defined contribution asset mix	
Stocks	73%
Bonds	6.5%
Cash equivalents	20.5%

TRENTON, N.J. — As of Sept. 30, the New Jersey Division of Investment's total employee benefit assets increased 1.6% to $20.092 billion from $19.785 billion a year earlier. Defined benefit assets also increased 1.6% during the same period, to $19.892 billion from $19.57 billion. Defined contribution assets decreased 7% to $200 million from $215 million.

All assets are managed internally.

A group of 12 banks serves as custodian.

Key personnel overseeing the investment management of the fund are Roland M. Machold, director; and Stephen Kornrumpf, assistant director.

New Mexico Educational Retirement Board

	($ millions)
Total assets	1,750
Defined benefit	1,750
Employer contributions	65
Benefit payments	70
In-house assets	
Equities	80
Fixed income	1,660
Short term	10
Alternative investments	
Mortgage-backed securities	140
Defined benefit asset mix	
Stocks	4.5%
Bonds	87%
Cash equivalents	0.5%
Mortgage-backed securities	8%

SANTA FE, N.M. — As of Sept. 30, the market value of the New Mexico Educational Retirement Board's total employee benefit assets was $1.75 billion. In 1987, the board reported assets at book value, so a comparison is not valid.

All assets are defined benefit and managed internally.

Equity adviser: Vaughn, Nelson, Scarborough & McConnell.

The master custodian is Irving Trust.

The key person overseeing the investment management of the fund is John E. Young, investment officer.

New Mexico Public Employees' Retirement Association

	($ millions)
Total assets*	1,513
Defined benefit	1,513
Employer contributions	127
Benefit payments	na
*From Money Market Directory	

SANTA FE, N.M. — As of June 30, the New Mexico Public Employees Retirement Association's total employee benefit assets increased 2.9% to $1.513 billion from $1.471 billion Sept. 30, 1987.

All new information for this profile came from the 1989 Money Market Directory.

Investment managers: Criterion; Fiduciary Trust; First Chicago; INVESCO; and Wentworth, Hauser & Violich.

The custodian is Irving Trust; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Carlos Gallegos, executive secretary, and Judith K. Alderson, director-investment division.

New York City Retirement Systems

	($ millions)
Total assets	35,537
Defined benefit	35,537
Employer contributions	2,059
Benefit payments	3,406
In-house assets	
Fixed income	408
Short term	694
Passive investments	
Indexed stocks	7,853
Indexed bonds	14,712
GICs	1,004
Alternative investments	
Mortgages	62
Mortgage-backed securities	580
Defined benefit asset mix	
Stocks	36%
Bonds	43%
Cash equivalents	2%
Mortgage-backed securities	16%
GICs	3%

NEW YORK — As of Sept. 30, the New York City Retirement Systems' total employee benefit assets increased 5.6% to $35.537 billion from $33.633 billion a year earlier, all in defined benefit assets.

The New York City comptroller's office oversees all investments for the New York City Employees', the Fire Department and the Police Department retirement systems and oversees fixed-income investments for the Teachers' and the Board of Education systems. The Teachers' system oversees its GIC and equity investments and the equity investments of the Board of Education system.

All the managers listed below are for the assets overseen by the comptroller.

Equity managers: Bankers Trust; Bear Stearns; Fidelity Management Trust; Investment Advisers; J&W Seligman; Lazard Freres; Oppenheimer; Stein Roe; and TCW.

Fixed-income managers: Banker's Trust; BEA; Bear Stearns; Chase; Fiduciary Trust; Fischer, Francis; Investment Advisers; Kennedy; Lehman; Lincoln; Mellon; Miller, Anderson; Mitchell Hutchins; PIMCO; T. Rowe Price; Putnam; RCM; Smith Barney; State Street Bank; Weiss, Peck; and Wells Fargo.

The master custodian of assets overseen by the comptroller is Citibank; the investment consultants are Buck; Callan; EAI; Rogers, Casey & Barksdale; and SEI. RCB is also the Teachers' consultant.

Key personnel overseeing the investment management of the systems overseen by the comptroller's office are Beverly L. Hamilton, third deputy comptroller; William Paolino, chief-bureau of asset management; David McNiff, chief-investment analysis; John Burns, senior investment analyst-international; Stewart Dier, senior investment analyst-fixed income; and Rene Kenny, senior investment analyst-real estate.

Key personnel overseeing investments of the Teachers' system are Donald S. Miller, executive director; Patrick J. Kiernan, deputy director-fiscal; and Diane R. Sisenwein, portfolio administrator.

Top 200 funds with defined benefit assets:

Internally managed

Fund	Assets $ millions
California Public Employees	41,800
New York State & Local	32,944
New York State Teachers	20,399
New Jersey Investment	19,892
General Electric	19,500
Texas Teachers	19,439
Wisconsin Investment Board	16,419
Ohio Public Employees	16,040
State of Michigan	15,798
Ohio State Teachers	15,348
E.I. du Pont de Nemours	11,570
IBM	11,000
University of California	10,123
North Carolina Systems	9,832
USX	8,550
Florida State Board	8,262
Georgia Teachers	7,525
United Nations Joint Staff	7,146
Alabama Systems	7,000
Maryland State	6,858
Colorado Public Employees	6,700
Tennessee Consolidated	6,582
Washington State Board	6,080
South Carolina Retirement	6,009
Texas Employees	5,108
Minnesota State Board	4,326
Prudential Insurance	4,064
Chicago Teachers	2,981
Georgia Employees	2,945
Oregon Public Employes	2,800
Bethlehem Steel	2,700
Sears, Roebuck	2,441
Utah State	2,430
Metropolitan Life	2,272
Aetna Life & Casualty	2,242
California State Teachers	2,240
Alaska Retirement Systems	2,099
GTE	2,050
Ameritech	2,000
Massachusetts Teachers	2,000
General Dynamics	2,000
Textron	1,860
Ohio Police & Firemen	1,819
Deere	1,800
Grumman	1,800
New Mexico Educational	1,750
Union Carbide	1,711
Westinghouse Electric	1,665
Ohio School Employees	1,620
AT&T	1,615
Commonwealth Edison	1,566
Atlantic Richfield	1,425
Travelers Insurance	1,376
Illinois State Board	1,320
Allied-Signal	1,300
Connecticut Trust Funds	1,226
San Francisco Employees	1,205
Exxon	1,185
Virginia Supplemental	1,131
New York City	1,101
CIGNA	1,025
Shell Oil	1,019
Ford Motor	1,000
GenCorp	983
New York Life	966
American Airlines	900
Hughes Aircraft	900
Hawaii State Employees	874
Pennsylvania Public School	789
Kentucky Retirement	773
Nat'l Rural Electric Co-op	737
Nat'l Electrical Contractors/IBEW	736
NYNEX	614
Louisiana Teachers	566
Trans World Air Lines	556
RJR Nabisco	550
UMWA	550
Louisiana State	525
BellSouth	513
Armco	501
Rhode Island Retirement	450
Digital Equipment	417
BP America	379
Amoco	366
Chevron	360
Chrysler	358
Martin Marietta	310
Delta Airlines	300
Kentucky Teachers	208
Arkansas Teachers	199
Illinois Municipal	191
Kansas Public Employees	175
Los Angeles City	175
United Methodist Church	171
Oklahoma Teachers	150
K mart	149
Southern Baptist Convention	129
Bakery & Confectionery	124
Philadelphia Municipal	106
Los Angeles Fire & Police	90
Los Angeles Water & Power	82
Mississippi Public Employees	75
Teamsters, Central States	72
Southern California UFCW	72
Eli Lilly	70
Los Angeles County	70
Monsanto	69
Arizona State	68
Chicago Municipal	68
Detroit Systems	50
New Mexico Public Employees	45
United Parcel Service	35
Episcopal Church	30
Minnesota Mining & Mfg.	20
Boilermaker Blacksmith	8
Nevada Public Employees	5
Total	**426,732**

New York Life Insurance Co.

	($millions)
Total assets*	1,500
Defined benefit	1,338
Defined contribution	162
Employer contributions	na
Benefit payments	46
*P&I Age estimate	
In-house assets	
Fixed income	909
Other	35
Passive investments	
Indexed stocks	41
Indexed bonds	40
Alternative investments	
Real estate equity	33
Defined benefit asset mix	
Stocks	16.4%
Bonds	13.1%
Real estate equity	2.6%
Other	67.9%
Defined contribution asset mix	
Stocks	17%
Bonds	2.7%
Cash equivalents	64.8%
GICs	12.6%
Other	2.9%

NEW YORK — As of Sept. 30, *Pensions & Investment Age* estimates New York Life Insurance Co.'s total employee benefit assets were $1.5 billion, up 6.8% from the $1.404 billion the company reported as of year-end 1987 and down 4.2% from the $1.566 billion *P&I Age* estimated it held as of Sept. 30, 1987.

All assets are managed by New York Life and its subsidiary, MacKay-Shields.

Key personnel overseeing the investment management of the fund are Donald K. Ross, chairman; George A. W. Bundschuh, vice chairman, and Harry Hohn, vice chairman.

New York State & Local Retirement Systems

	($ millions)
Total assets	37,918
Defined benefit	37,918
Employer contributions	1,321
Benefit payments	1,382
In-house assets	
Equities	12,598
Fixed income	15,728
Short term	1,083
Other	3,535
Passive investments	
Indexed stocks	12,598
Alternative investments	
Venture capital	55
LBOs	423
Real estate equity	347
Mortgages	2,701
Mortgage-backed securities	2,567
Defined benefit asset mix	
Stocks	46.3%
Bonds	34.7%
Cash equivalents	2.9%
Mortgages	7.1%
Mortgage-backed securities	6.8%
Other	2.2%

ALBANY, N.Y. — As of Sept. 30, the New York State & Local Retirement Systems' total employee benefit assets decreased 2.1% to $37.918 billion from $38.747 billion a year earlier. All assets are defined benefit.

Investment managers: Alliance Capital Guardian; Delaware; Equitable Investment; Lazard Freres; Lord, Abbett; Miller, Anderson & Sherrerd; Oppenheimer; J&W Seligman; Shearson; and Wells Fargo.

Real estate managers: CIGNA; Corporate Property Investors; Eastdil; Goldman, Sachs; JMB; LaSalle; J.W. O'Connor; and RREEF.

LBO managers: Forstmann Little and KKR.

Venture capital managers: APA Excelsior; Bridge Capital; Crossroads; Montgomery Bridge; New York State Business Venture Partnership; Peregrine Ventures; and U.S. Venture Partners.

The master trustee is Chase Manhattan; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are John E. Hull, deputy comptroller-division of investments and cash management; John J. O'Connor, chief investment officer; and William M. Barrett, director-equities and fixed-income investment.

New York State Teachers' Retirement System

	($ millions)
Total assets	22,779
Defined benefit	22,779
Employer contributions	911
Benefit payments	775
In-house assets	
Equities	4,736
Fixed income	189
Short term	519
Other	105
Passive investments	
Indexed stocks	4,515
Alternative investments	
International equities	190
Venture capital	41
Private placements	616
Real estate equity	21
Mortgages	994
Mortgage-backed securities	663
Defined benefit asset mix	
Stocks	33%
Bonds	53%
Cash equivalents	2%
Mortgages	9%
Mortgage-backed securities	4%

ALBANY, N.Y. — As of Sept. 30, the New York State Teachers' Retirement System's total employee benefit assets decreased 1.1% to $22.779 billion from $23.035 billion a year earlier. All the assets were defined benefit assets.

Equity managers: Sanford Bernstein; Beutel, Goodman Capital; General American Advisers; Glickenhaus; Lehman; and Oppenheimer Capital.

Fixed-income manager: Sanford Bernstein.

The master custodian is Bankers Trust; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are Harold N. Langlitz, executive director; Edward J. Reno Jr., securities investment officer; and George M. Philip, chief real estate investment officer.

North Carolina Retirement Systems

	($ millions)
Total assets	13,800
Defined benefit	13,800
Employer contributions	531
Benefit payments	553
In-house assets	
Fixed income	9,832
Passive investments	
Indexed stocks	989
Alternative investments	
International equities	162
International bonds	105
Private placements	279
Real estate equity	182
Mortgage-backed securities	1,325
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	25.8%
Bonds	63.1%
Cash equivalents	0.2%
Real estate equity	1.3%
Mortgage-backed securities	9.6%

RALEIGH, N.C. — As of Sept. 30, North Carolina Retirement Systems' total employee benefit assets increased 10.9% to $13.8 billion from $12.446 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Alliance; Branch Bank; Central Carolina Bank; First Citizens Bank; First Union Bank; First Wachovia; NCNB; and Thorndike, Doran, Paine & Lewis.

International — Alliance; Branch Bank; Central Carolina Bank; First Citizens Bank; First Union Bank; First Wachovia; NCNB; and Thorndike, Doran, Paine & Lewis.

Real estate managers: Aetna; CIGNA; First Wachovia; Goldman, Sachs; NCNB; and Sentinel.

The master custodian is Bank of New York.

Key personnel overseeing the investment management of the fund are Harlan E. Boyles, state treasurer; C. Douglas Chappell, deputy treasurer and director-investment and banking division; and P. Keith Leonard, assistant state investment officer.

Structured investing: Feb. 20.

Northrop Corp.

	($ millions)
Total assets	2,979
Defined benefit	2,243
Defined contribution	736
Employer contributions	0
Benefit payments	60
Defined benefit asset mix	
Stocks	65%
Bonds	25%
Cash equivalents	10%
Defined contribution asset mix	
Stocks	37%
Bonds	9%
Cash equivalents	21%
Company stock	33%

LOS ANGELES — As of Sept. 30, Northrop Corp.'s total employee benefit assets decreased 12.4% to $2.979 billion from $3.402 billion a year earlier. Defined benefit assets decreased 11% during the same period, to $2.243 billion from $2.519 billion, while defined contribution assets decreased 16.6%, to $736 million from $883 million.

Equity managers: Capital Guardian; Forstmann-Leff; Jennison; Putnam; RCM; and State Street Research.

Fixed-income managers: Fischer, Francis, Trees & Watts and Jennison.

The master trustee is Bankers Trust.

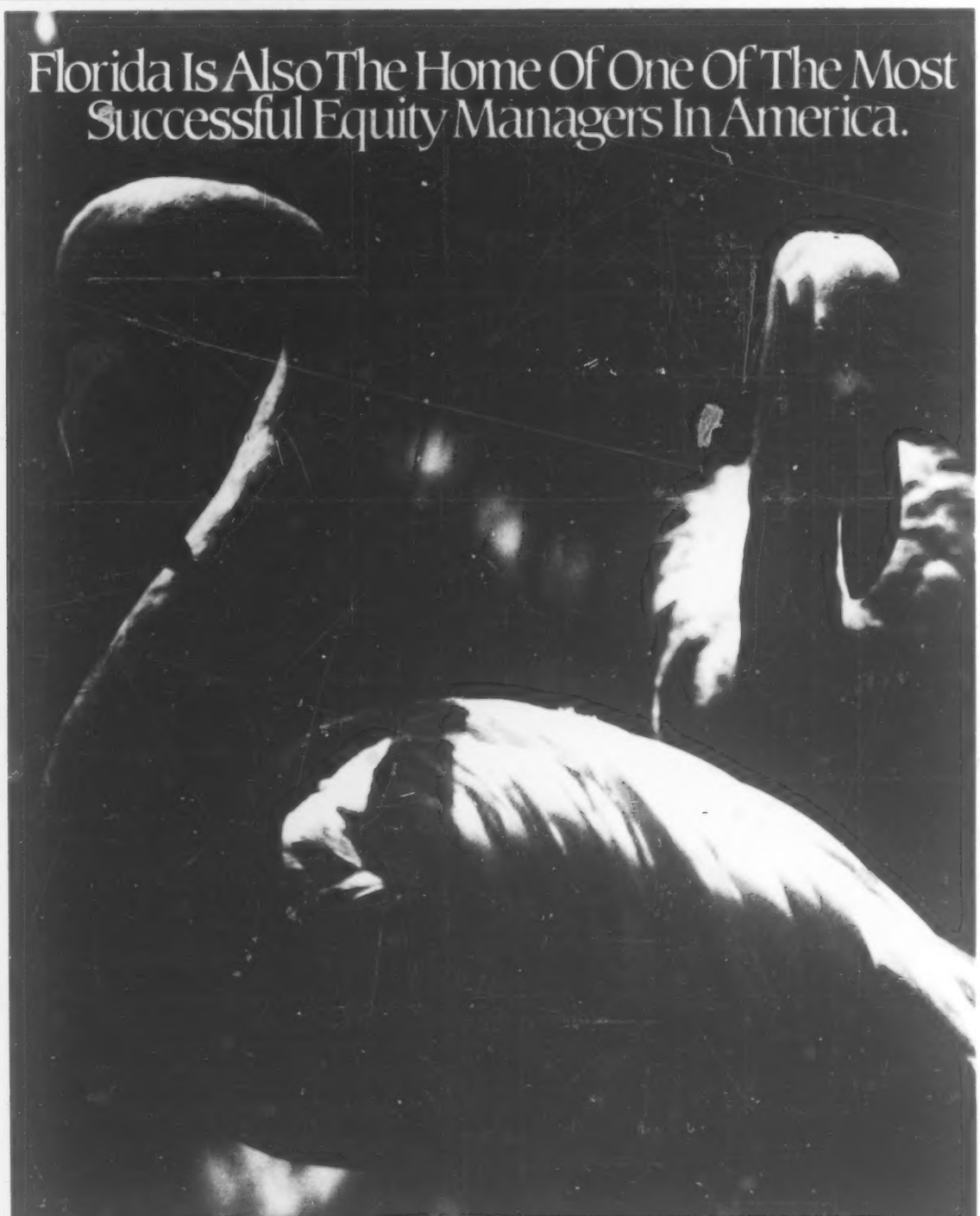
The key person overseeing the investment management of the fund is Richard B. Lohrer, vice president-trust investments.

NYNEX Corp.

	($ millions)
Total assets	13,401
Defined benefit	11,262
Defined contribution	2,139
Employer contributions	89
Benefit payments	496
In-house assets	
Fixed income	614
Passive investments	
Indexed stocks	4,114
Indexed bonds	1,149
Alternative investments	
International equities	453
Venture capital	26
Private placements	150
Real estate equity	809
Mortgage-backed securities	450
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	58%
Bonds	31%
Real estate equity	7%
Mortgage-backed securities	4%
Defined contribution asset mix	
Stocks	25%
Bonds	7%
GICs	28%
Company stock	40%

NEW YORK — As of Sept. 30, NYNEX Corp.'s total employee benefit assets decreased 6.5% to $13.401 billion from $14.336 billion a year earlier. Defined benefit assets decreased 5.9% during the same period, to $11.262 billion from $11.966 billion. Defined contribution assets decreased 9.7% to $2.139 billion from $2.37 billion.

Equity managers: Domestic — American National, Chicago; Barrow, Hanley, Mewhinney & Strauss; Bat-



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Barnett Bank Barnett Banks Trust Company, N.A.

terymarch; Daniel Breen; Dimensional; Fidelity Management Trust; Franklin Portfolio; McCowan; Mitchell Hutchins; Trinity Investment; TCW; and Wells Fargo Investment.

International — American National; Chicago; Capital Guardian; Dimensional; Melion-Pictet; and Wells Fargo Investment.

Fixed-income managers: Domestic — Boston Co.; Brown Brothers Harriman; John Hancock; Jennison; Lincoln Capital; Massachusetts Financial; Miller Anderson & Sherrerd; Mitchell Hutchins; Prudential Capital; Standish Ayer & Wood; State Street Research; and Western Asset.

International — Prudential Capital.

Real estate managers: Aldrich Eastman & Waltch; Corporate Property Investors; Heitman Advisory; and McMahan.

The master trustee and global custodian is Mellon.

Key personnel overseeing the investment management of the fund are L.R. Smart, corporate director-finance, and J.E. Clines, director-investment management.

O

Police and Firemen's Disability and Pension Fund of Ohio

	($ millions)
Total assets	2,614
Defined benefit	2,614
Employer contributions	138
Benefit payments	241
In-house assets	
Fixed income	1,181
Short term	448
Passive investments	
Indexed stocks	228
Alternative investments	
Venture capital	14
Real estate equity	126
Mortgages	19
Mortgage-backed securities	406
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	17%
Bonds	61%
Cash equivalents	13%
Real estate equity	5%
Mortgage-backed securities	12%

COLUMBUS, Ohio — As of Sept. 30, the Police and Firemen's Disability and Pension Fund of Ohio's total employee benefit assets increased 4.5% to $2.614 billion from $2.502 billion a year earlier. All assets are defined benefit.

Equity managers: Atalanta Sosnoff; Axe Core; Bankers Trust; Duff & Phelps; Loomis, Sayles; Oppenheimer; Society Bank; and Value Line.

Real estate managers: Copley; Schroder; TA Associates; Trident; Meyer.

Venture capital managers: Cardinal Financial; Primus.

The master custodian is the state treasurer; the real estate investment consultant is The Townsend Group.

Key personnel overseeing the investment management of the fund are Theodore G. Hall, investment manager, and Christopher Woods, fixed-income portfolio manager.

Ohio Public Employees' Retirement System

	($ millions)
Total assets	16,408
Defined benefit	16,408
Employer contributions	780
Benefit payments	860
In-house assets	
Equities	3,278
Fixed income	10,681
Short term	2,079
Other	24
Alternative investments	
Venture capital	24
Private placements	100
Real estate equity	368
Mortgage-backed securities	5,882
Defined benefit asset mix	
Stocks	20%
Bonds	29%
Cash equivalents	13%
Real estate equity	2%
Mortgage-backed securities	36%

COLUMBUS, Ohio — As of Sept. 30, the Ohio Public Employees' Retirement System's total employee benefit assets increased 9.5% to $16.408 billion from $14.985 billion a year earlier. All assets are defined benefit.

Real estate managers: Bristol Group; CIGNA; NCNB; Rothschild; Sentinel; and Wells Fargo.

The master custodian is the state treasurer; the investment consultants are SEI, A. Gary Shilling and Value Line.

The key person overseeing the investment management of the fund is Robert A. McLaughlin, investment officer.

School Employees Retirement System of Ohio

	($ millions)
Total assets	2,418
Defined benefit	2,418
Employer contributions	234
Benefit payments	293
In-house assets	
Equities	202
Fixed income	975
Short term	250
Other	295
Passive investments	
Indexed stocks	658
Alternative investments	
Venture capital	24
Real estate equity	209
Mortgages	43
Mortgage-backed securities	480
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	45.5%
Bonds	29%
Cash equivalents	10.5%
Real estate equity	11.5%
Mortgages	1.8%
Mortgage-backed securities	20.1%
Venture capital	1%

COLUMBUS, Ohio — As of Sept. 30, the School Employees Retirement System of Ohio's total employee benefit assets increased 0.4% to $2.418 billion from $2.409 billion a year earlier. All assets are defined benefit.

Equity manager: Mellon Capital.

Real estate managers: Equitable; NCNB; and Prudential.

Venture capital managers: Cardinal Capital; Morgenthaler; and Primus.

The master custodian is the state treasurer; the investment consultant is Ronald A. Karp Associates.

Key personnel overseeing the investment management of the fund are Paul M. Kubinsky, director of investments, and Robert G. Cowman, assistant director of investments.

State Teachers Retirement System of Ohio

	($ millions)
Total assets	15,348
Defined benefit	15,348
Employer contributions	672
Benefit payments	810
In-house assets	
Equities	4,852
Fixed income	2,456
Short term	1,200
Other	1,835
Passive investments	
Dedicated-immunized	205
Alternative investments	
Venture capital	25
Private placements	11
Real estate equity	1,825
Mortgages	1,045
Mortgage-backed securities	1,371
Hedging devices	
Stock options	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	32%
Bonds	41%
Cash equivalents	8%
Real estate equity	12%
Mortgages	7%
Mortgage-backed securities	10%

COLUMBUS, Ohio — As of Sept. 30, the State Teachers Retirement System of Ohio's total employee benefit assets increased 3.6% to $15.348 billion from $14.821 billion a year earlier. All of the assets are in an internally managed defined benefit plan.

The master custodian is the state treasurer.

Thorndike, Doran, Paine & Lewis serves as consultant on the financial markets and Thomas L. Karsten, as real estate consultant.

Key personnel overseeing the investment management of the fund are C. James Grothaus, executive director; Stephen A. Mitchell, director of investments; and Daniel M. Szente, assistant director-investments.

Oklahoma Teachers' Retirement System

	($ millions)
Total assets	1,800
Defined benefit	1,700
Other	100
Employer contributions	120
Benefit payments	280
In-house assets	
Short term	150
Defined benefit asset mix	
Stocks	21%
Bonds	70%
Cash equivalents	9%

OKLAHOMA CITY — As of Sept. 30, the Oklahoma Teachers' Retirement System's total employee benefit assets increased 3.7% to $1.8 billion from $1.735 billion a year earlier. Defined benefit assets decreased 2% during the same period, to $1.7 billion from $1.735 billion.

Equity managers: Capital Advisors and Lazard.

Fixed-income managers: Siebel Capital.

Balanced managers: Bank of Oklahoma; First Investment; Tom Johnson; and Liberty National.

The master custodian is First Interstate; the investment consultant is Kidder Peabody.

Key personnel overseeing investment management of the fund are Tommy C. Beavers, executive secretary; Randall L. Kopsa, secretary-treasurer; and Jo Witt, manager-financial operations.

Central Pension Fund of the International Union of Operating Engineers and Participating Employers

	($ millions)
Total assets	1,832
Defined benefit	1,832
Employer contributions	100
Benefit payments	74
Passive investments	
Indexed stocks	464
Indexed bonds	668
GICs	104
Alternative investments	
Real estate equity	18
Mortgages	181
Mortgage-backed securities	18
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	31.4%
Bonds	49.5%
Cash equivalents	11.5%
Real estate equity	1%
Mortgages	9.9%
Mortgage-backed securities	1
GICs	5.7%

WASHINGTON — As of Sept. 30, the Central Pension Fund of the International Union of Operating Engineers and Participating Employers' total employee benefit assets increased 6.6% to $1.832 billion from $1.718 billion a year earlier. All of the assets are defined benefit assets.

Equity managers: Analytic Investment; Sanford Bernstein; Concord Capital; and Wells Fargo.

Fixed-income managers: Criterion; Loomis Sayles; Lowe, Brockenbrough, Tierney & Tattersall; and Wells Fargo.

Real estate manager: Aldrich, Eastman & Waltch.

The master trustee is State Street Bank; the investment consultant is Ennis, Knupp.

Key personnel overseeing the investment management of the fund are Jack E. Johnson, director of finance, and Robert A. Birch, assistant to the director of finance.

Oregon Public Employes Retirement System

	($ millions)
Total assets	8,800
Defined benefit	8,800
Employer contributions	348
Benefit payments	300
In-house assets	
Fixed income	2,800
Alternative investments	
International equities	800
Venture capital	100
LBOs	500
Real estate equity	375
Mortgages	460
Mortgage-backed securities	140
Defined benefit asset mix	
Stocks	57%
Bonds	25%
Real estate equity	4.3%
Mortgages	5.3%
Mortgage-backed securities	1.6%
Venture capital	1.1%
LBOs	5.7%

Top 200 funds with defined benefit assets invested in:

Internally managed indexed equities

Fund	Assets $ millions
New York State & Local	12,598
New York State Teachers	9,517
California Public Employees	4,109
General Electric	3,700
Florida State Board	1,878
E.I. du Pont de Nemours	1,531
Deere	1,000
Exxon	833
Sears, Roebuck	776
Ameritech	650
Alabama Systems	603
Prudential Insurance	573
Utah State	520
Georgia Teachers	478
RJR Nabisco	383
Chrysler	358
Colorado Public Employees	327
Kentucky Retirement	301
GTE	242
Texas Employees	201
Virginia Supplemental	175
Maryland State	169
State of Michigan	150
Travelers Insurance	98
Georgia Employees	89
CIGNA	44
Total	41,303

Top 200 funds with defined benefit assets invested in:

Internally managed indexed bonds

Fund	Assets $ millions
NYNEX	614
Washington State Board	570
UMWA	450
General Dynamics	240
Exxon	226
Prudential Insurance	154
Travelers Insurance	49
Total	2,303

SALEM, Ore. — As of Sept. 30, the Oregon Public Employes Retirement System's employee benefit assets showed minimal growth, reporting $8.8 billion compared with $8.789 billion a year earlier. All assets are defined benefit.

Equity managers: Domestic — Batterymarch; BEA; Columbia Management; Cutler; Franklin Asset Management; Froley, Revy Investment; General American Investors; Harris Associates; Hotchkis & Wiley; Olympic Management; Pinnacle Associates; Quest Advisory; Rosenberg Capital; Fayez Sarofim; George D. Springman; Thompson-Rubinstein; and William D. Witter.

International — Cursitor-Eaton; Daiwa; Globe-Finlay; Matushka-Moser; Nomura Capital Management; Rowe Price-Fleming; and Wertheim-Phillipe.

Real estate managers: Alex Brown and PRA Securities.

LBO manager: KKR.

The master custodian for fixed income is Chase, while for equities it is First Interstate of Oregon; investment consultants are Frank Russell and Wilshire.

Key personnel overseeing the investment management of the fund are Jim George, manager; Bill Unvertzagt, senior investment officer for bonds; Jim Yasutome, senior investment officer for short-term investments; and Terry Canby, senior investment officer for real estate and mortgages.

Owens-Illinois Inc.

	($ millions)
Total assets	2,286
Defined benefit	1,985
Thrift or savings	301
Employer contributions	9
Benefit payments	112
Passive investments	
Indexed bonds	19
Alternative investments	
International equities	287
International bonds	53
Venture capital	49
Real estate equity	98
Mortgages	57
Mortgage-backed securities	36
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	67.5%
Bonds	12.8%
Cash equivalents	8.1%
Real estate equity	4.8%
Mortgages	2.9%
Mortgage-backed securities	3.8%
Other	1%

TOLEDO, Ohio — As of Sept. 30, Owens-Illinois Inc.'s total employee benefit assets increased 2.5% to $2.286 billion from $2.23 billion a year earlier. Defined benefit assets increased 1.8% during the same period, to $1.985 billion from $1.95 billion, and 401(k) assets grew 7.5%, to $301 million from $280 million.

In addition to the investments listed above, Owens-Illinois has $200,000 in indexed stocks and $500,000 in oil and gas.

Equity managers: Domestic — Barrow, Hanley; Dimensional; Emerging Growth; Franklin Portfolio; Harbor Capital; Jennison; Lazard Freres; Marsh & Cunningham; State Street Bank; and Wright Investors.

International — Franklin Portfolio; Grantham, Mayo, Van Otterloo; Marsh & Cunningham; and Morgan Grenfell.

Fixed-income managers: Domestic — Jennison; Lazard; PIMCO; State Street Bank; and Trustcorp.

International — Julius Baer and PIMCO.

Real estate managers: Aldrich, Eastman & Waltch; American Agricultural; Boston Co.; PRISA (Prudential); RPI Institutional; RREEF; Security Capital.

The master trustee is First Wachovia; the global custodian is Chase London; the investment consultant is Richards & Tierney.

Key personnel overseeing the investment management of the fund are Jerome A. Bohland, senior vice president and chief financial officer; and Ronald C. Boller, vice president and director of benefit finance.

P

Pacific Gas and Electric Co.

	($ millions)
Total assets*	3,299
Defined benefit	2,439
Defined contribution	860
Employer contributions	120
Benefit payments	125
*as of June 30, 1988	
Passive investments	
Indexed stocks	386
Alternative investments	
International equities	219
Private placements	83
Real estate equity	226
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	70%
Bonds	19%
Cash equivalents	2%
Real estate equity	9%
Defined contribution asset mix	
Stocks	8%
Cash equivalents	1%
GICs	2%
Company stock	89%

SAN FRANCISCO — As of June 30, Pacific Gas and Electric Co.'s total employee benefit assets decreased 7.3% to $3.299 billion from $3.56 billion nine months earlier. Defined benefit assets decreased 7% during the same period, to $2.439 billion from $2.624 billion. Defined contribution assets decreased 8.1%, to $860 million from $936 million.

Equity managers: Domestic — Barrow, Hanley; Dodge & Cox; Geewax, Terker; Jundt/Capen; Loomis, Sayles; McCowan; Miller, Anderson & Sherrerd; Olympic; RCM; and Wells Fargo Investment.

International — Arnhold & S. Bleichroeder; Capital Guardian; Oechsle; Posthorn; and Wells Fargo.

Fixed-income managers: Sanford C. Bernstein; Fischer, Francis, Trees &

Watts; and Miller, Anderson.

Real estate managers: Corporate Property Investors; JMB; LaSalle; Metropolitan Life; Prudential Asset; RREEF; and TCW.

State Street Bank is master trustee and global custodian. Frank Russell is the investment consultant.

Key personnel overseeing the investment management of the fund are Sunny Oberoi, director-pension fund management; and Peter K. Conippo, senior financial analyst-pension fund management.

Pacific Telesis Group

	($ millions)
Total assets*	9,639
Defined benefit	8,747
*Thrift or savings	892
Employer contributions	na
Benefit payments	na
*From Money Market Directory	

SAN FRANCISCO — As of June 30, Pacific Telesis Group's total employee benefit assets decreased 2.3% to $9.639 billion from $9.867 billion a year earlier, according to the Money Market Directory, which provided the information for this profile. Defined benefit assets decreased 2.5% during the same period, to $8.747 billion from $8.975 billion. Thrift or savings plan assets decreased slightly to $891 million from $892 million.

Managers: CNA; Copley; Delphi Discount Corp.; Dodge & Cox; Fidelity International; Fischer, Francis, Trees & Watts; Hotchkis & Wiley; IDS Advisory; IDS Financial; JMB; Jones Lang Wootton; Jundt Capen; LaSalle; Lord Abbett; John McStay; Mellon Capital; Metropolitan; Morgan Grenfell Capital; Morgan Grenfell Investment; Oechsle; PIMCO; Pilgrim Baxter Greig; Posthorn; Provident National; RCM Capital; Sit Investment; Solomon; TCW Realty; Thompson Siegel & Walmsley; United Capital; Weiss Peck & Greer; Wellington Management; Wells Fargo; and Western Asset.

The master trustees for the defined benefit plan are Mellon Bank and Northern Trust; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are E. Douglas Taylor, executive director-investment management; Honor R. Fetherston, director-investment administration and real estate; and Richard P. McGahan, director-pension funds.

J.C. Penney Co. Inc.

	($ millions)
Total assets*	2,662
Defined benefit	1,078
Profit-sharing/thrift or savings	1,584
Employer contributions	133
Benefit payments	na
*From Money Market Directory	

DALLAS — As of June 30, J.C. Penney Co. Inc.'s total employee benefit assets decreased 17% to $2.662 billion from the $3.212 billion *Pensions & Investment Age* estimated as of Sept. 30, 1987. Defined benefit assets decreased 17% during the same period, to $1.078 billion from $1.301 billion, and defined contribution assets also dropped 17% to $1.584 billion from $1.911 billion.

All of the 1988 data were taken from the Money Market Directory.

Investment managers: Batterymarch; Fidelity International; GeoCapital; Grantham, Mayo, Van Otterloo; Lieber; Miller, Anderson; RCM; RREEF; and TCW.

The master trustee is State Street Bank; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Thomas A. Clerkin, assistant treasurer; and Robert E. Northam, chief financial officer.

Pennsylvania State Employes' Retirement System

	($ millions)
Total assets	7,967
Defined benefit	7,967
Employer contributions	377
Benefit payments	530
Indexed stocks	1,681
Indexed bonds	604
Alternative investments	
International bonds	78
Venture capital	81
Private placements	1
Real estate equity	558
Mortgages	529
Mortgage-backed securities	243
Defined benefit asset mix	
Stocks	43.2%
Bonds	29.7%
Cash equivalents	9.4%
Real estate equity	7%
Mortgages	6.6%
Mortgage-backed securities	3.1%
Other	1%

HARRISBURG, Pa. — As of Sept. 30, the Pennsylvania State Employes' Retirement System's total pension assets were virtually unchanged from a year earlier, increasing to $7.967 billion from $7.965. All of the assets are defined benefit.

Equity managers: Barrow Hanley; Centre Square; Geewax, Terker; Glickenhaus; McGlinn; Mellon; Miller, Anderson; Pilgrim Baxter; Provident Investment; Sun Bank; and Trinity.

Fixed-income managers: Domestic — Delaware; Fidelity; W.R. Huff; Mellon; Miller, Anderson; and Payden & Rygel.

International — Miller, Anderson.

Tactical asset allocator: Wells Fargo.

Real estate managers: Aetna; Copley; Corporate Property Investors; F.I.A.; John Hancock; Heitman; JMB; Metric; Prudential; PSI; and Sentinel.

Venture capital managers: APA/Fostin and PA Venture Capital.

Private placement manager: CIGNA.

The master custodian is the state treasurer; First Pennsylvania is the subcustodian; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Kenneth G. Mertz, chief investment officer; Karen Nicely, assistant chief investment officer; and David Burnett and William Zisk, investment analysts.

Retiree health care: May 29

Pennsylvania Public School Employes' Retirement System

	($ millions)
Total assets	12,999
Defined benefit	12,999
Employer contributions	932
Benefit payments	783
In-house assets	
Fixed income	663
Short term	126
Passive investments	
Indexed stocks	1,224
Indexed bonds	1,883
Dedicated/immunized	164
Alternative investments	
Venture capital	129
Real estate equity	675
Mortgages	223
Mortgage-backed securities	874
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	33%
Bonds	35%
Cash equivalents	16%
Real estate equity	6%
Mortgages	2%
Mortgage-backed securities	7%
Other	1%

HARRISBURG, Pa. — As of Sept. 30, the Pennsylvania Public School Employes' Retirement System's total employee benefit assets increased 8.1% to $12.999 billion from $12.021 billion a year earlier. All the assets are defined benefit.

Equity managers: Bankers Trust; Cashman, Farrell; Delaware; Dreman; Mackenzie Financial; Mellon Bank; Mellon Capital; Miller, Anderson; Oppenheimer; and Provident Capital.

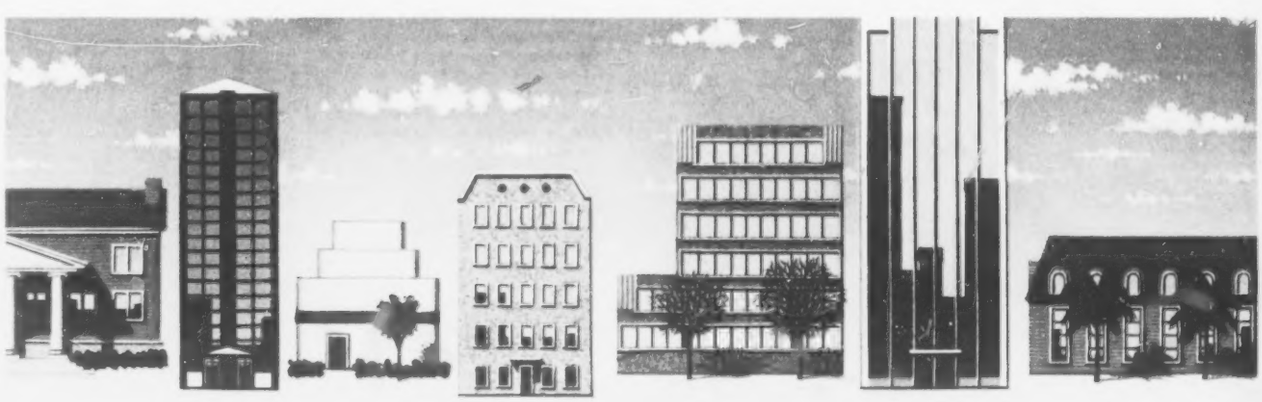
Fixed-income managers: Criterion; Glenmede; Loomis, Sayles; Mellon Bank; Miller, Anderson; PIMCO; Pittsburgh National Bank; and Putnam Advisory.

Real estate managers: Fidelity Bank and Jones Lang Wootton.

Venture capital managers: CEO Venture Fund; CIGNA; Commonwealth Ventures Partners; Fostin & Patricof; Genesis Seed Fund; NEPA; and Trivest.

Short-term managers: State treasury department.

Options managers: Oppenheimer



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Securities lending: First Pennsylvania Bank.

Other managers: Addison; Advisor Investment Managers; Ariston; Birmingham Capital; Brandywine; Brown Capital; Columbus Circle; Comstock Partners; Crabbe-Huson; Crawford Investment; Cutler; Eagle; Evans & Moxon; Glenmede; Greenleaf; Gulf Investment; Income Research & Management; Newbold's; Pilgrim Baxter Greig; Princeton; Security Pacific; TCW; and Edward A. Viner/Hudson Capital.

The master custodian is First Pennsylvania Bank; the global custodian is State Street Bank; the investment consultant is Evaluation Associates.

Key personnel overseeing the investment management of the fund are James Perry, executive director; Clay Mansfield, chief investment officer; Michael T. Grubic, assistant chief investment officer; and Mary Jo Beshore, investment accounting division chief.

City of Philadelphia Municipal Pension Fund

	($ millions)
Total assets	1,578
Defined benefit	1,578
Employer contributions	140
Benefit payments	206
In-house assets	
Short term	106
Passive investments	
Indexed stocks	83
Indexed bonds	86
Alternative investments	
Venture capital	4
Real estate equity	88
Mortgages	7
Mortgage-backed securities	3
Defined benefit asset mix	
Stocks	40.3%
Bonds	36.6%
Cash equivalents	14.9%
Real estate equity	5.4%
Mortgages	0.4%
Mortgage-backed securities	0.2%
Other	2.2%

PHILADELPHIA — As of Sept. 30, the City of Philadelphia Municipal Pension Fund's total employee benefit assets decreased 0.6% to $1.578 billion from $1.587 billion a year earlier. All the assets are defined benefit.

Equity managers: Domestic — Ariel; Atalanta/Sosnoff; Bankers Trust; Columbus Circle; Delaware; Miller, Anderson & Sherrerd; NCM Capital; Nelson, Benson & Zellmer; Parametric; Peregrine; and Trinity.

International — Dimensional Fund Advisors; Parametric; SBC; and World-Invest.

Fixed-income managers: Criterion; 1838 Investment Advisors; Lincoln Capital; Miller, Anderson; and TCW.

Real estate managers: Copley; Dover; Grubb & Ellis; JMB; MIG Realty; Public Storage; Sentinel; and Stonemark.

Venture capital managers: CIGNA; Genesis Seed Fund; Hall; and Meridian.

First Pennsylvania is master custodian and global custodian; the investment consultant is Frank Russell Trust.

Key personnel overseeing the investment management of the fund are Peter G. Crescitelli, executive director, and Margaret Samkavitz, investment analyst.

Philip Morris Cos. Inc.

	($ millions)
Total assets	4,500
Defined benefit	3,300
Defined contribution	1,200
Employer contributions	170
Benefit payments	120
Passive investments	
Indexed stocks	100
GICs	120
Alternative investments	
International equities	220
Venture capital	30
Real estate equity	90
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	63%
Bonds	22%
Cash equivalents	8%
Real estate equity	3%
GICs	4%
Defined contribution asset mix	
Stocks	39%
GICs	54%
Company stock	5%
Other	2%

NEW YORK — As of Sept. 30, total employees benefit assets of Philip Morris Cos. Inc. more than doubled from a year earlier because of its absorption of General Foods Inc. When the previous year's figures are combined, however, the comparison shows a decrease of 1.5% to $4.5 billion as of Sept. 30, from $4.568 billion a year earlier. Defined benefit assets decreased 5.1% to $3.3 billion from $3.477 billion when combining the previous year's figures. Defined contribution assets increased 10% to $1.2 billion from $1.091 billion.

The employee benefit assets of Philip Morris and General Foods are being managed together. Although the plans of both companies were combined into one Philip Morris trust Jan. 1, they will remain separate for accounting purposes.

Equity managers: Domestic — Alliance; Batterymarch; BEA; Sanford Bernstein; First Wisconsin; Glickenhaus; Jennison; Miller, Anderson; RCM; State Street Bank; Thorndike, Doran; and Trinity.

International — J.P. Morgan; Morgan Grenfell; N.M. Rothschild; and State Street Bank.

Fixed-income managers: J.P. Morgan; PIMCO; Scudder, Stevens & Clark; State Street Bank.

Real estate managers: Heitman; JMB; J.P. Morgan; New Court; Schroder; and TCW.

Other managers: Blackstone; Consumer Venture Partners; John Hancock; New Court Partners; and Sprout.

The master trustees are State Street and Northern Trust for the pension plans and Bankers Trust for the defined contribution plan. State Street Bank and Northern Trust also are global custodians.

Key personnel overseeing the investment management of the fund are B. Jack Miller, staff vice president; Mary Lee Calimano, manager; and John Pecora, financial analyst.

Phillips Petroleum Co.

	($ millions)
Total assets	1,700
Defined benefit	300
Thrift or savings	1,400
Employer contributions	na
Benefit payments	50
Passive investments	
Indexed stocks	15
Dedicated/immunized	225
Alternative investments	
LBOs	5
Real estate equity	42
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	6%
Bonds	74%
Cash equivalents	6%
Real estate equity	14%
Defined contribution asset mix	
Stocks	60%
Bonds	4%
Cash equivalents	1%
GICs	35%

BARTLESVILLE, Okla. — As of Sept. 30, Phillips Petroleum Co.'s total employee benefit assets increased 24.4% to $1.7 billion from $1.366 billion Dec. 31, 1987. Defined benefit assets decreased 14.3% during the same period, to $300 million from $350 million, and defined contribution assets increased 37.8%, to $1.4 billion from $1.366 billion. The 1987 numbers were provided by Money Market Directory.

Equity manager: Wells Fargo.

Fixed-income managers: Equitable; Morgan Guaranty and Prudential.

Real estate managers: JMB; Victor Palmieri; and RREEF.

LBO manager: Forstmann Little.

The master trustee is Citibank.

The key person overseeing the investment management of the fund is Rex W. Holsapple, director-foreign exchange and investment.

Plumbers, National Headquarters

	($ millions)
Total assets*	1,658
Defined benefit	1,658
Employer contributions	66
Benefit payments	na

*P&I Age estimate

WASHINGTON — The Plumbers, National Headquarters' total employee benefit assets increased 3.7%, rising to an estimated $1.658 billion from $1.599 billion reported in last year's profile issue. All the data were estimated based on figures from Money Market Directory.

Manager: ASB Capital Management.

The master custodian is Capital Management.

The key person overseeing the investment management of the fund is Marsha Pugh, administrator.

PPG Industries Inc.

	($ millions)
Total assets*	1,677
Defined benefit	919
Thrift or savings	755
Other	3
Employer contributions	73
Benefit payments	na

*From Money Market Directory

PITTSBURGH — As of June 30, PPG Industries Inc.'s total employee benefit assets decreased 6.8% to $1.677 billion from the $1.8 billion *P&I Age* estimated as of Sept. 30, 1987. All updated data for this profile came from the 1989 Money Market Directory.

Investment managers: Chancellor; Federated Securities; Fidelity Management Trust; Loomis, Sayles; Mellon Capital; J.P. Morgan; Neuberger and Berman; Prudential Asset; Reich & Tang; and Schroder Capital.

The master trustee is Mellon Bank; the investment consultant is Frank Russell Co.

Key personnel overseeing the investment management of the fund are L.M. Call, treasurer, and Charles H. Elmer, manager-pension investment administration.

The Board of Pensions of the Presbyterian Church (USA)

	($ millions)
Total assets	2,000
Other	2,000
Employer contributions	66
Benefit payments	65

PHILADELPHIA — As of Sept. 30, total employee benefit assets The Board of Pensions of the Presbyterian Church (USA) decreased 5.7% to $2 billion from $2.122 billion a year earlier. All assets are in a combined defined benefit/defined contribution plan.

The master trustee is Mellon Bank; the global custodian is Mellon Pictet through Mellon Bank; the investment consultants are Callan Associates and Debatin Associates.

Key personnel overseeing the investment management of the fund are Wm. Irwin Arbuckle II, vice president-investments and treasurer; and Judith D. Freyer, assistant treasurer.

Procter & Gamble Co.

	($ millions)
Total assets*	3,102
Defined benefit	149
Profit-sharing	2,953
Employer contributions	187
Benefit payments	na

*From Money Market Directory

CINCINNATI — As of June 30, Procter & Gamble Co.'s total employee benefit assets fell 13.4% to $3.102 billion from $3.58 billion a year earlier. Defined benefit assets decreased 11.3% during the same period, to $149 million from $168 million. Defined contribution assets decreased 13.5% to $2.953 billion from $3.412 billion.

All 1988 data were taken from Money Market Directory.

Investment managers: Aetna Life; Metropolitan Life; J.P. Morgan; T. Rowe Price; Prudential Asset; and Wells Fargo Investment.

Key personnel overseeing the investment management of the fund are George M. Gibson, vice president and treasurer, and J.R. Smith, manager-pension plan coordination.

Prudential Insurance Co. of America

	($ millions)
Total assets	9,276
Defined benefit	4,084
Thrift or savings	1,139
401(k)	53
Employer contributions	30
Benefit payments	141
In-house assets	
Equities	1,981
Fixed income	1,200
Short term	409
Other	493
Passive investments	
Indexed stocks	573
Indexed bonds	154
Dedicated/immunized	211
Alternative investments	
International equities	365
International bonds	280
Venture capital	16
Private placements	111
Real estate equity	477
Defined benefit asset mix	
Stocks	48.5%
Bonds	29.4%
Cash equivalents	10.4%
Real estate equity	11.7%
Defined contribution asset mix	
Stocks	5.8%
Bonds	94.2%

NEWARK, N.J. — As of Sept. 30, Prudential Insurance Co. of America's total employee benefit assets were $5.3 billion. A comparison with 1987 assets is not possible because thrift and 401(k) data for Sept. 30, 1987, were not available.

Defined benefit assets declined 4.9% during the year ended Sept. 30 to $4.084 billion from $4.294 billion.

All of the company's employee benefit assets are managed internally. Prudential acts as its own master trustee; Chase Manhattan Bank is global custodian.

Key personnel overseeing the investment management of the fund are James H. Gately, executive vice president-Prudential Affiliated Investors, and James H. Scott, Managing Director, PDI Strategies.

Top 200 funds with defined benefit assets invested in:

Oil & gas

Fund	Assets ($ millions)
AT&T	245
Minnesota State Board	76
GTE	56
Southwestern Bell	45
USX	40
Washington State Board	37
Honeywell	36
Exxon	33
Ford Motor	25
Textron	15
Caterpillar	14
ITT	10
S. New England Telephone	8
RJR Nabisco	7
Atlantic Richfield	4
Aluminum Co. of America	2
Maine State	2
Monsanto	2
Tennessee Valley Authority	2
Owens-Illinois	1
Total	672

R

Raytheon Co.

	($ millions)
Total assets	2,430
Defined benefit	1,900
Defined contribution	30
401(k)	500
Employer contributions	90
Benefit payments	50
Passive investments	
Indexed stocks	470
Dedicated/immunized	330
Alternative investments	
Real estate equity	15
Defined benefit asset mix	
Stocks	73%
Bonds	18%
Cash equivalents	8%
Real estate equity	1%

LEXINGTON, Mass. — As of Sept. 30, Raytheon Co.'s total employee benefit assets decreased 1% to $2.43 billion from $2.455 billion a year earlier. Defined benefit assets decreased 4.2% during the same period, to $1.9 billion from $1.984 billion, while 401(k) assets increased 13.4% to $500 million from $441 million.

Equity managers: Bankers Trust; Batterymarch; Boston Co.; Brignoli, Curley & Roberts; Dewey Square; Fidelity; INVESCO; Loomis, Sayles; Matrix; Paribas; Rosenberg; State Street Research; and Sun Bank.

Fixed-income managers: Loomis, Sayles and Richmond Capital.

The master trustee is Boston Safe Deposit.

Key personnel overseeing the investment management of the fund are Herbert Deitcher, vice president and treasurer; W. Bruce Livingston, manager-employee benefits financing; and Steven S. DeMeo, investment analyst.

Employees Retirement System of Rhode Island

	($ millions)
Total assets	1,911
Defined benefit	1,911
Employer contributions	80
Benefit payments	100
In-house assets	
Short term	450
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	39%
Bonds	37%
Cash equivalents	24%

PROVIDENCE, R.I. — As of Sept. 30, total employee benefit assets of the Employees Retirement System of Rhode Island increased 5.6% to $1.911 billion from $1.809 billion a year earlier. All assets are defined benefit.

Equity manager: Fleet National Bank.

Fixed-income manager: Fleet National Bank.

The master custodian is State Street Bank; the investment consultant is Wilshire.

Jerome F. Williams, deputy general treasurer for finance, oversees the investment management of the fund.

RJR Nabisco Inc.

	($ millions)
Total assets	3,387
Defined benefit	2,491
401(k)	896
Employer contributions	155
Benefit payments	120
In-house assets	
Equities	550
Passive investments	
Indexed stocks	383
Venture capital	27
Oil and gas	7
Real estate equity	127
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	52.1%
Bonds	24.9%
Cash equivalents	16.2%
Real estate equity	5.2%
Other	1.6%
Defined contribution asset mix	
Stocks	8.3%
Cash equivalents	3.2%
GICs	11.3%
Company stock	75.6%
Other	1.6%

ATLANTA — As of Sept. 30, RJR Nabisco Inc.'s total employee benefit assets decreased 4.3% to $3.387 billion from $3.54 billion a year earlier. Defined benefit assets decreased 4.2% during the same period, to $2.491 billion from $2.6 billion, while 401(k) assets decreased 4.7% to $896 million from $940 million.

Equity managers: Alliance; Capital Guardian; Concord Capital; Delaware; Jennison; Reich & Tang; Warburg, Pincus; and Wellington Management.

Fixed-income managers: BEA Associates; Lincoln Capital; PIMCO; and TCW.

Real estate managers: Copley; Equitable; First Wachovia; LaSalle; Mellon; and J.W. O'Connor.

Other managers: Concord Partners; Dumuth Folger & Terhune; Energy Recovery Management; Fairfield Venture; Forstmann Little; MBW Venture; Plant Resources; and TA Associates.

The master trustee is First Wachovia; the investment consultant is Frank Russell.

They key person overseeing the investment management of the fund is Robert E. Shultz, vice president, pension asset management.

Rockwell International Corp.

	($ millions)
Total assets*	8,583
Defined benefit	6,222
Thrift or savings	2,361
Employer contributions	na
Benefit payments	na

*P&I Age estimate

PITTSBURGH — As of June 30, Rockwell International Corp. had total employee benefit assets of $8.583 billion, according to *Pensions & Investment Age* estimates. Defined benefit assets totaled $6.222 billion, according to the company's annual report; defined contribution assets were $2.361 billion, according to *P&I Age* estimates.

According to the Money Market Directory, Rockwell's money managers include:

Beutel, Goodman; Boston Co. Real Estate; Cashman, Farrell; CIGNA; First Interstate Bank of California; First Interstate Bank of California; First Pacific Advisors; Hotchkis and Wiley; Manufacturers Bank; Metropolitan Life; J.P. Morgan; Morgan Stanley Asset; National Bank of Detroit; PRIMECAP; Provident Investment Counsel; Fayez Sarofim; Scudder, Stevens & Clark; Security Pacific; Siphron & Meyers; Stralem; Tower Capital; Vanguard; Waite & Correnti; and Western Asset.

The master trustees are Mellon Bank and National Bank of Detroit.

Key personnel overseeing the investment management of the fund are E. William Altstaetter, vice president-pensions, insurance & risk management; Lee H. Cramer, vice president and treasurer; and Susan Leathers, director-pension assets management.

S

City & County of San Francisco Employees Retirement System

	($ millions)
Total assets*	3,322
Defined benefit	3,229
457	93
Employer contributions	228
Benefit payments	180
*as of June 30, 1988	
In-house assets:	
Equities	101
Fixed income	1,104
Passive investments:	
Indexed stocks	348
Alternative investments:	
International equities	332
International bonds	304
Venture capital	4
Real estate equity	125
Mortgages	15
Mortgage-backed securities	200
Defined benefit asset mix:	
Stocks	38%
Bonds	44%
Cash equivalents	10%
Real estate equity	4%
Mortgage-backed securities	6%
Defined contribution asset mix:	
Stocks	24%
Bonds	11%
Cash equivalents	2%
GICs	63%

SAN FRANCISCO — As of June 30, the City & County of San Francisco Employees Retirement System's total employee benefit assets increased 4.2% to $3.322 billion from $3.189 billion Sept. 30, 1987. Defined benefit assets increased 1.3% during the same period, to $3.229 billion from $3.189 billion.

Equity managers: Domestic — Axe Core; Furman Selz; Hanson Investment; Loomis, Sayles; McCullough, Andrews & Cappiello; Nicholas-Applegate; and George Springman.

International — Capital Guardian; Morgan Grenfell; and Oechsle.

Fixed-income managers: Domestic — Axe-Houghton; Caywood-Christian; MacKay-Shields; Miller, Anderson; Scudder, Stevens; and TCW Asset.

International — First Chicago and Warburg Investment.

Real estate managers: Coldwell Banker; JMB; and Schroder.

Venture capital manager: Crossroads.

Bankers Trust is the master custodian and global custodian; Callan is the investment consultant.

Key personnel overseeing the investment management of the fund are DeWitt F. Bowman, chief investment officer; and Carolyn Hamilton, assistant chief of investments. Mr. Bowman has since resigned and taken a new position with the California Public Employees' Retirement System.

Sears, Roebuck & Co.

	($ millions)
Total assets	7,176
Defined benefit	2,667
Profit-sharing 401(k)	1,509
Employer contributions	na
Benefit payments	na
In-house assets	
Equities	1,213
Fixed income	950
Short term	132
Other	148
Passive investments	
Indexed stocks	776
Alternative investments	
International equities	102
Venture capital	91
Real estate equity	40
Mortgages	49
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	46%
Bonds	36%
Cash equivalents	5%
Real estate equity	1%
Mortgages	2%
Other	10%
Defined contribution asset mix	
Stocks	18%
Bonds	15%
Cash equivalents	21%
Company stock	46%

CHICAGO — As of Sept. 30, Sears, Roebuck & Co.'s total employee benefit assets decreased 12.8% to $7.176 billion from $8.225 billion a year earlier. Defined benefit assets decreased 9.8% during the same period, to $2.667 billion from $2.958 billion. Defined contribution assets decreased 14.4%, to $4.509 billion from $5.267 billion.

Equity managers: Domestic — Sears Investment Management.

International — Capital Guardian and Sears Investment Management.

Fixed-income manager: Sears Investment Management.

Real estate managers: Aldrich, Eastman & Waltch and Coldwell Banker.

The master trustee for the defined benefit plan is Continental Bank; the master trustee for the defined contribution plan is Northern Trust; each also serves as global custodian for its respective plan.

Key personnel overseeing the investment management of the fund, all with Sears Investment Management, are David V. Dootson, president; Michael Norton, vice president-fixed income division; James Smith, vice president-venture capital and emerging growth; and David Williams, vice president and research director.

Managers Directory: May 22.

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* * *

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Sheet Metal Workers International

	($ millions)
Total assets*	1,408

*P&I Age estimate

WASHINGTON — As of Sept. 30, *Pensions & Investment Age* estimates total employee benefits of the Sheet Metal Workers International were $1.408 billion.

The following managers were taken from the Money Market Directory.

Managers: Independence Investment; Investors Research; Loomis, Sayles; Potomac Asset; Prudential Asset; Segal Advisors; and Unity Management.

The investment consultant is Segal Advisors.

Key personnel overseeing the investment management of the fund are Lonnie A. Bassett, secretary and treasurer, and Walter Carlough, general president.

Shell Oil Co.

	($ millions)
Total assets	6,686
Defined benefit	3,108
Defined contribution	3,093
401(k)	297
Other	188
Employer contributions	170
Benefit payments	400
In-house assets	
Equities	237
Fixed income	705
Short term	77
Passive investments	
Indexed bonds	154
GICs	77
Alternative investments	
International equities	50
Real estate equity	406
Mortgages	8
Mortgage-backed securities	175
Hedging devices	
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	51.5%
Bonds	23.5%
Cash equivalents	3.5%
Real estate equity	13%
Mortgage-backed securities	6%
GICs	2.5%
Defined contribution asset mix	
Stocks	7.7%
GICs	90.8%
Company stock	1.5%

HOUSTON — As of Sept. 30, Shell Oil Co.'s total employee benefit assets decreased 3.4% to $6.686 billion from $6.918 billion a year earlier. Defined benefit assets decreased 6% during the same period, to $3.108 billion from $3.307 billion. Defined contribution assets decreased 8.5%, to $3.093 billion from $3.38 billion.

Equity managers: Domestic — Criterion, Dodge & Cox; Equitable Capital; Independence; Kemper; and Fayez Sarofim.

International — AIG.

Fixed-income managers: Domestic — BEA; Sanford Bernstein; Chase; and Duff & Phelps.

Real estate managers: Aetna; Cabot, Cabot & Forbes; Equitable; First Chicago; Hancock; Heitman; JMB; Prudential; and RREEF.

Other managers: Allstate; Confederation Life; Metropolitan Life; Mutual of New York; New York Life; Pacific Mutual; Provident National; Travelers.

The master trustee for the defined benefit plan is Bankers Trust; trustees for the defined contribution plan are NCNB and Texas Commerce; the global custodian is Boston Safe. Frank Russell is the investment consultant.

Key personnel overseeing the investment management of the fund are L.S. Chaikind, administrator; J.B. Kloehr, secretary; and K.A. Guske, performance analyst.

South Carolina Retirement System

	($ millions)
Total assets	6,009
Defined benefit	6,009
Employer contributions	238
Benefit payments	277
In-house assets	
Fixed income	6,009
Defined benefit asset mix	
Bonds	100%

COLUMBIA, S.C. — As of Sept. 30, the South Carolina Retirement System's total employee benefit assets increased 16.2% to $6.009 billion from $5.171 billion a year earlier. All assets are in defined benefit plans, and all are managed internally.

Jamison, Eaton & Wood provides investment consulting services.

Key personnel overseeing the investment management of the fund are Grady L. Patterson Jr., state treasurer, and Shakun Tahiliani, investment director.

Annuity Board of the Southern Baptist Convention

	($ millions)
Total assets	2,223
Defined benefit	727
Defined contribution	1,493
Thrift or savings	3
Employer contributions	na
Benefit payments	71
In-house assets	
Other	129
Passive investments	
GICs	88
Alternative investments	
Real estate equity	23
Mortgages	18
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	40%
Bonds	33%
Cash equivalents	9%
Real estate equity	3%
Mortgages	3%
GICs	12%
Defined contribution asset mix	
Stocks	15%
Bonds	26%
Cash equivalents	12%
GICs	47%

DALLAS — As of Sept. 30, the Annuity Board of the Southern Baptist Convention's total employee benefit assets increased 7.9% to $2.223 billion from $2.061 billion a year earlier. Defined benefit assets decreased 3.3% during the same period, to $727 million from $752 million. Defined contribution assets increased 14%, to $1.493 billion from $1.309 billion.

Equity managers: Alliance; Capital Guardian; Lazard Freres; Loomis, Sayles; Scudder; and Thorndike, Doran.

Fixed-income managers: Sanford C. Bernstein; MacKay-Shields; J.P. Morgan; and STW.

The master trustee is NCNB-Texas; the investment consultant is SEI.

Key personnel overseeing the investment management of the fund are W. Gordon Hobgood Jr., executive vice president and chief operating officer; Dave L. Borders, vice president; and A.C. Halsell, investment manager.

Southern California Edison

	($ millions)
Total assets	2,104
Defined benefit	1,298
401(k)	566
ESOP	240
Employer contributions	66
Benefit payments	117
Passive investments	
Indexed stocks	75
GICs	90
Alternative investments	
International equities	73
International bonds	88
Venture capital	27
Real estate equity	52
Mortgage-backed securities	68
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	49%
Bonds	21%
Cash equivalents	12%
Real estate equity	4%
Mortgage-backed securities	5%
GICs	7%
Venture capital	2%
Defined contribution asset mix	
Stocks	5%
Bonds	1%
Cash	3%
GICs	8%
Company stock	77%
Other	6%

ROSEMEAD, Calif. — As of Sept. 30, Southern California Edison's total employee benefit assets increased 2.1% to $2.104 billion from $2.06 billion a year earlier. Defined benefit assets decreased slightly during the same period, to $1.298 billion from $1.299 billion, while 401(k) plan assets increased 5.2%, to $566 million from $538 million, and ESOP assets rose 7.6% to $240 million from $223 million.

Equity managers: Domestic — Batterymarch; Dimensional Fund; Dodge & Cox; Hotchkis & Wiley; Jundt/Capen; Pacific Financial; PIMCO; RCM; and Rosenberg Institutional.

International — Batterymarch; TCW; and Warburg.

Fixed-income managers: Domestic — PIMCO and RCM.

Real estate managers: Equitable; JMB; LaSalle; Pacific Mutual; and TCW.

Venture capital managers: Euclid; IVP; Summit Ventures; TCW; and Venturetech.

Asset allocation: Mellon Capital.

Cash manager: Payden & Rygel.

The master trustee for the defined benefit plan is Security Pacific, and for the defined contribution plan, First Interstate; the global custodian is Mitsubishi; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are Jim Scilacci, manager-investor relations and pension investment, and Rich Yamamoto, supervisor-pension investment.

Southern Co. Services Inc.

	($ millions)
Total assets	2,600
Defined benefit	2,000
401(k)	600
Employer contributions	50
Benefit payments	50
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

ATLANTA — As of Sept. 30, Southern Co. Services Inc.'s total employee benefit assets increased 2% to $2.6 billion from $2.55 billion a year earlier. Defined benefit assets remained at $2 billion; 401(k) assets increased 9% to $600 million from $550 million.

Equity managers: AmSouth Bank; INVESCO; Jundt/Capen; Lieber; Miller, Anderson; Northern Capital; Spears, Benzak; and Strong/Corneliuson.

Fixed-income managers: Discount Corp.; First Wachovia; and Trusco.

Real estate manager: First Wachovia.

The master trustee is Bankers Trust.

The key person overseeing the investment management of the fund is David Prince, assistant treasurer.

Southern New England Telephone Co.

	($ millions)
Total assets	1,625
Defined benefit	1,400
Defined contribution	200
ESOP	25
Employer contributions	17
Benefit payments	55
Passive investments	
Indexed stocks	660
Alternative investments	
International equities	202
Oil and gas	8
Private placements	4
Real estate equity	79
Mortgage-backed securities	5
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	61%
Bonds	29%
Cash equivalents	4%
Real estate equity	6%
Defined contribution asset mix	
Stocks	6%
GICs	71%
Company stock	23%

NEW HAVEN, Conn. — As of Sept. 30, Southern New England Telephone Co.'s total employee benefit assets decreased 4.4% to $1.625 billion from $1.7 billion a year earlier. Defined benefit assets decreased 6.6% during the same period, to $1.4 billion from $1.5 billion. Defined contribution assets remained constant at $200 million.

Equity managers: Domestic — American National Bank; Analytic; Barrow, Hanley, Mewhinney & Strauss; Connecticut National Bank; Moran; Wellington; and Wells Fargo.

International — Mercator; Posthorn; and State Street.

Fixed-income managers: Dreyfus; Equitable; Putnam; and STW.

Real estate managers: CIGNA; JMB; LaSalle; Schroder Real Estate; and Sentinel.

Other manager: Resource Investors Management.

The master trustees are Boston Safe Deposit for the defined benefit plan and Bankers Trust for the defined contribution plan.

Key personnel overseeing the investment management of the fund are John Miller, assistant secretary and treasurer, and Katherine Griswold, staff manager.

Top 200 funds with defined benefit assets invested in:

Venture capital

Fund	Assets $ millions
AT&T	443
General Electric	300
University of California	271
Washington State Board	240
State of Michigan	228
Minnesota State Board	146
GTE	139
Pennsylvania Public School	129
Ameritech	125
Allied-Signal	100
Oregon Public Employes	100
Sears, Roebuck	91
Los Angeles County	88
Pennsylvania State Employes	81
United Technologies	75
Exxon	70
Honeywell	63
New York State & Local	55
Chicago Municipal	54
E.I. du Pont de Nemours	53
Ford Motor	50
Illinois Teachers	50
Aluminum Co. of America	47
Amoco	47
New York State Teachers	47
State of Delaware	46
Southwestern Bell	44
Atlantic Richfield	42
Delta Air Lines	40
Owens-Illinois	40
Wisconsin Investment Board	40
Unisys	38
Illinois Municipal	36
World Bank	36
Deere	30
Philip Morris	30
American Electric Power	29
RJR Nabisco	27
Southern California Edison	27
NYNEX	26
BP America	25
Ohio State Teachers	25
Ohio Public Employees	24
Ohio School Employees	24
Connecticut Trust Funds	21
Grumman	20
Utah State	20
Illinois State Board	19
Army & Air Force Exchange	18
Prudential Insurance	16
Colorado Public Employees	15
Ohio Police & Firemen	14
Minnesota Mining & Mfg.	13
Kraft	13
Eli Lilly	10
Nat'l Electrical Contractors/IBEW	10
Armco	9
Digital Equipment	7
Chevron	6
Nevada Public Employees	6
Inland Steel Industries	5
Philadelphia Municipal	4
San Francisco Employees	4
NCR	2
Total	**3,953**

Southwestern Bell Corp.

	($ millions)
Total assets	6,961
Defined benefit	6,086
Defined contribution	875
Employer contributions	44
Benefit payments	250
Passive investments	
Indexed stocks	1,661
Dedicated/immunized	2,066
Alternative investments	
International equities	244
Venture capital	44
Oil and gas	45
Real estate equity	660
Defined benefit asset mix	
Stocks	53%
Bonds	34%
Cash equivalents	1%
Real estate equity	11%
Other	1%
Defined contribution asset mix	
Stocks	23%
Bonds	4%
GICs	39%
Company stock	34%

ST. LOUIS — As of Sept. 30, Southwestern Bell Corp.'s total employee benefit assets decreased 3.7% to $6.961 billion from $7.231 billion a year earlier. Defined benefit assets decreased 5.8% during the same period, to $6.086 billion from $6.461 billion. Defined contribution assets increased 13.6% to $875 million from $770 million.

Equity managers: Domestic — Franklin Portfolio; GeoCapital; Jennison; Nicholas-Applegate; NCNB Texas; Pilgrim Baxter; and Wells Fargo.

International — Fidelity; IDS; and Nomura.

Fixed-income managers: Jennison and Mississippi Valley.

Real estate managers: Boston Counsel; Heitman; and McMahan Associates.

Venture capital managers: First Chicago and Crossroads.

The master trustee is NCNB Texas National Bank; the global custodian is Chase; the investment consultant is Buck.

Key personnel overseeing the investment management of the fund are M.A. Devine, director-pension investments, and C. Weaver, director-pension fund.

State Farm Insurance Cos.

	($ millions)
Total assets*	2,601
Defined benefit	2,085
Defined contribution*	516
Employer contributions	53
Benefit payments	na

*P&I Age estimate

BLOOMINGTON, ILL. — As of Sept. 30, State Farm Insurance Cos.' total employee benefit assets decreased less than 1% to $2.601 billion from $2.623 billion a year earlier. Defined benefit assets decreased 5.2% during the same period, to $2.085 billion from $2.2 billion. *Pensions & Investment Age* estimates the defined contribution assets increased 8.2% since Dec. 31, 1987, to $516 million from $477 million.

According to the Money Market Directory, 98% of the assets are managed internally.

Equity manager: Dimensional Fund.

Key personnel overseeing the investment management of the fund are Rex J. Bates, financial vice president, and Charles Jordan, superintendent-retirement.

Sun Co. Inc.

	($ millions)
Total assets	1,987
Defined benefit	1,545
401(k)	442
Employer contributions	16
Benefit payments	125
Passive investments	
Indexed stocks	171
Indexed bonds	125
GICs	53
Alternative investments	
International equities	141
International bonds	16
Real estate equity	181
Mortgages	21
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	47%
Bonds	23%
Cash equivalents	15%
Real estate equity	11%
Mortgages	1%
GICs	3%

RADNOR, Pa. — As of Sept. 30, Sun Co. Inc.'s total employee benefit assets decreased 1.1% to $1.987 billion from $2.01 billion a year earlier. Defined benefit assets decreased 3.4% during the same period, to $1.545 billion from $1.6 billion. 401(k) assets increased 10.5% to $442 million from $400 million.

Equity managers: Domestic — Analytic Investment; Bankers Trust; Sanford Bernstein; Heilman Jordan; Jennison; and Miller, Anderson & Sherrerd.

International — Capital Guardian; Fidelity International; J.P. Morgan; State Street Bank; and Warburg.

Fixed-income managers: Sanford Bernstein; Miller, Anderson & Sherrerd; and J.P. Morgan.

Real estate managers: Equitable

and Prudential.

Tactical asset allocation manager: Wells Fargo Investment.

Bankers Trust is the master trustee and global custodian. Frank Russell is the investment consultant.

Key personnel overseeing the investment management of the fund are Richard L. Veith, director-benefit plans investments, and Susan Graef, portfolio specialist.

T

Teachers Insurance and Annuity Association — College Retirement Equities Fund

	($ millions)
Total assets	67,141
Defined contribution	67,141
Employer contributions	3,200
Benefit payments	1,700
Defined contribution asset mix	
Stocks	44.1%
Bonds	25.5%
Cash equivalents	1%
Real estate equity	3.4%
Mortgages	23.8%
Mortgage-backed securities	2.2%

NEW YORK — As of Sept. 30, the Teachers Insurance Annuity Association — College Retirement Equities Fund's employee benefit assets increased 1.5% to $67.141 billion from $66.171 billion a year earlier. All assets are in defined contribution plans.

TIAA-CREF, the nation's largest pension plan, is managed internally. $21.6 billion in indexed stocks, $3 billion in international equities, $100 million in international fixed income, $600 million in leveraged buy-outs, $9 billion in private placements, $2.3 billion in real estate equity, $16 billion in mortgages, and $1.5 billion in mortgage-backed securities.

The master custodians for TIAA are Morgan Guaranty and Citibank. The domestic and global custodians for CREF are Bankers Trust and Chase Manhattan.

Key personnel overseeing the investment management for TIAA are J. Daniel Lee Jr., executive vice president, TIAA investments; David B. Bullett, senior vice president, TIAA securities; and John A. Somers, senior vice president, TIAA mortgages and real estate.

Overseeing CREF investments are James S. Martin, executive vice president, CREF investments; C. Oscar Morong Jr., senior vice president and director, CREF domestic active investments; and Virgil H. Cumming, vice president and director, CREF international investments.

Teamsters, Central States, Southeast and Southwest Areas Pension Fund

	($ millions)
Total assets	8,469
Defined benefit	8,469
Employer contributions	745
Benefit payments	898
In-house assets	
Short term	72
Passive investments	
Indexed stocks	2,673
Indexed bonds	2,586
Dedicated/immunized	75
Alternative investments	
Real estate equity	14
Defined benefit asset mix	
Stocks	42.8%
Bonds	55.8%
Cash equivalents	1.1%
Other	0.2%

CHICAGO — As of Sept. 30, the Teamsters, Central States, Southeast and Southwest Areas Pension Fund's assets decreased 0.2% to $8.469 billion from $8.482 billion a year earlier. All assets are defined benefit.

Equity managers: BEA; Equitable; INVESCO; Mellon Capital; and Wells Fargo.

Fixed income managers: Bankers Trust; Fiduciary; Lincoln; MacKay-Shields; Mellon Bank; Miller, Anderson & Sherrerd; Putnam; and T. Rowe Price.

Morgan Stanley Group Inc. is the fund's named fiduciary and oversees the investment management of the fund. At Central States, the key person is Ronald J. Kubalanza, executive director.

Western Conference of Teamsters' Pension Trust

	($ millions)
Total assets*	8,000
Defined benefit	8,000
Employer contributions	486
Benefit payments	590
*as of Aug. 31, 1988	
Passive investments	
Indexed stocks	860
Indexed bonds	460
Dedicated/immunized	3,940
GICs	60
Alternative investments	
Real estate equity	620
Mortgages	165
Defined benefit asset mix	
Stocks	12.6%
Bonds	56.4%
Cash equivalents	0.3%
Real estate equity	7.8%
Mortgages	2.1%
GICs	0.8%
Annuities	20%

SEATTLE — As of Aug. 31, the Western Conference of Teamsters' Pension Trust's assets increased 6.3% to $8 billion from $7.524 billion a year earlier. All the assets are defined benefit. The $165 million in mortgages is composed of $115 million in hybrid debt and $50 million in straight mortgages.

Equity managers: Fidelity Management Trust; Prudential Asset; and Wells Fargo Investment.

Fixed-income managers: Prudential Fixed Income.

Real estate managers: Phoenix Mutual and Prudential.

GIC managers: Pacific Mutual and Travelers.

The master custodian is Boston Safe Deposit; the investment consultant is Alan D. Biller & Associates.

Key personnel overseeing the investment management of the fund are Joseph Ballew, chairman of the board of trustees; Owen Bennett, co-chairman of the board; and John Bacon, chairman of the investment committee.

Tenneco Inc.

	($ millions)
Total assets	2,542
Defined benefit	1,717
401(k)	825
Employer contributions	41
Benefit payments	56
Passive investments	
Indexed stocks	400
Indexed bonds	280
Alternative investments	
Private placements	10
Mortgages	10
Mortgage-backed securities	50
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	60%
Bonds	27%
Cash equivalents	10%
Mortgage-backed securities	3%
Defined contribution asset mix	
Stocks	5%
Bonds	2%
Cash equivalents	66%
Company stock	26%
Other	1%

HOUSTON — As of Sept. 30, Tenneco Inc.'s total employee benefit assets decreased 3.7% to $2.542 billion from $2.635 billion a year earlier. Defined benefit assets decreased 5.1% during the same period, to $1.717 billion from $1.81 billion, while 401(k) assets increased 10% to $825 million from $750 million.

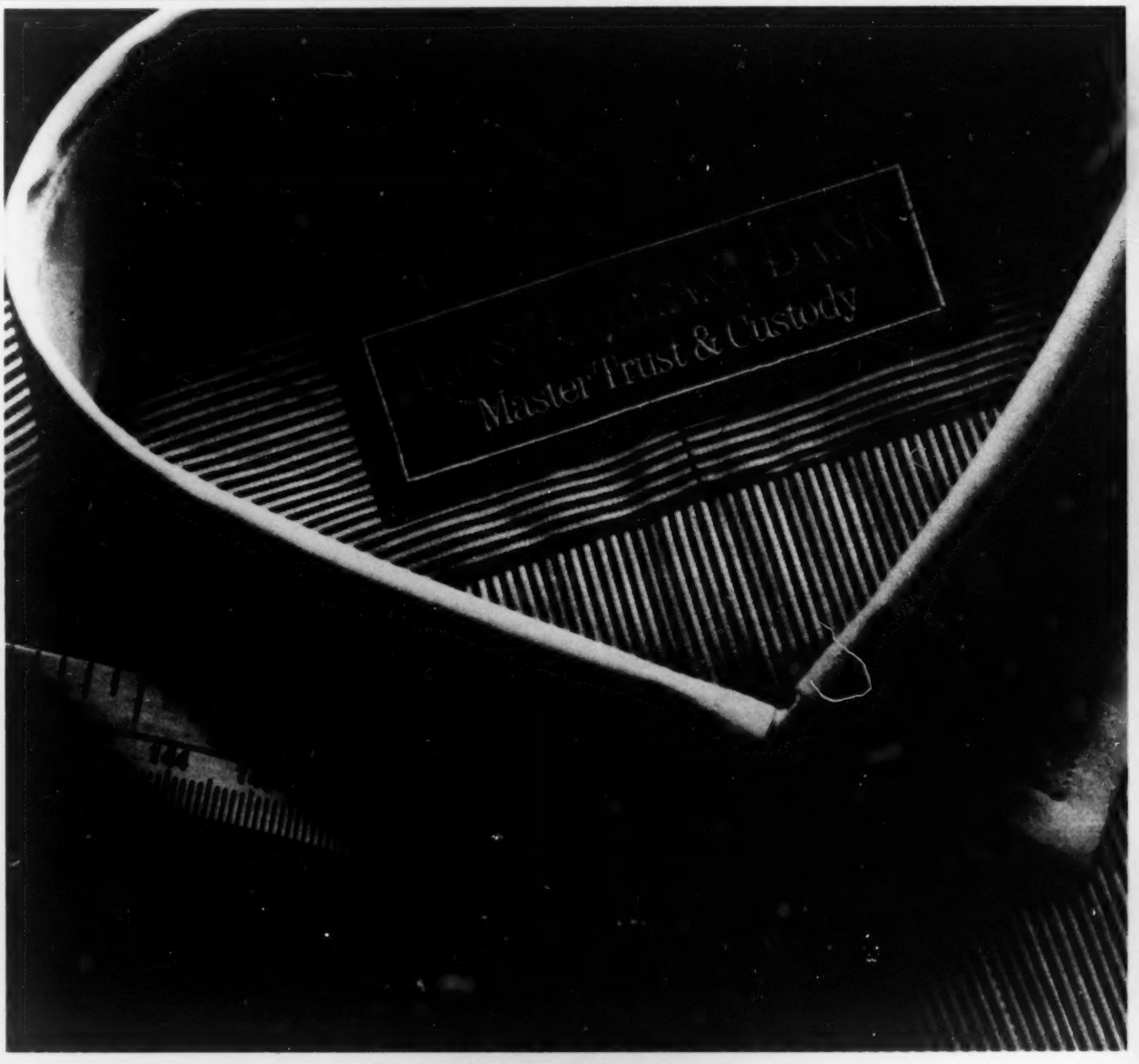
Equity managers: Sanford Bernstein; Capstone; Delaware; Dimensional Fund; IDS Advisory; Pilgrim Baxter Greig; and Fayez Sarofim.

Fixed-income managers: Capstone; Fischer, Francis; J.P. Morgan; State Street Research; and STW Asset.

Other manager: Bridge Capital.

The master trustee is NCNB-Texas; the investment consultant is Callan.

Key personnel overseeing the investment management of the fund are Ken Reese, chairman-investment committee, and Al Stewart, pension investment officer.



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Tennessee Consolidated Retirement System

	($ millions)
Total assets*	6,643
Defined benefit	6,582
401(k)	24
457	37
Employer contributions	385
Benefit payments	355
*Defined benefit assets as of Oct. 17, 1988; 401(k) and 457 assets as of June 30, 1988	
In-house assets	
Equities	2,235
Fixed income	1,336
Short term	145
Other	666
Alternative investments	
International equities	153
International bonds	145
Private placements	6
Mortgages	2
Mortgage-backed securities	443
Defined benefit asset mix	
Stocks	39%
Bonds	42.2%
Cash equivalents	6.6%
Mortgage-backed securities	6.7%
Defined contribution asset mix	
Stocks	15.7%
Bonds	2.8%
Cash equivalents	21.7%
GICs	13.5%
Annuities	37.1%
Other	1.2%

NASHVILLE, Tenn. — As of Oct. 17, assets of the Tennessee Consolidated Retirement System increased 8.3% to $6.643 billion from $6.132 billion Sept. 30, 1987. All the assets are managed internally.

Chase Manhattan is the master and global custodian.

Key personnel overseeing the investment management of the fund are Charles H. Webb, chief investment officer; Marshall Cox, fixed-income portfolio manager; and Jeremy Conlin, equity portfolio manager.

Tennessee Valley Authority Retirement System

	($ millions)
Total assets	2,700
Defined benefit	2,600
Thrift or savings	100
Employer contributions	na
Benefit payments	66
Passive investments	
Indexed stocks	691
Dedicated (immunized)	518
GICs	49
Alternative investments	
Oil and gas	3
Private placements	17
Real estate equity	11
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	48%
Bonds	47%
Cash equivalents	5%
GICs	2%

KNOXVILLE, Tenn. — As of Sept. 30, the Tennessee Valley Authority Retirement System's total employee benefit assets decreased 2.9% to $2.5 billion from $2.574 billion a year earlier. Defined benefit assets decreased 2.5% during the same period, to $2.4 billion from $2.461 billion. Thrift or savings plan assets decreased 11.5%, to $100 million from $113 million.

Equity managers: Disciplined Investment; Geewax, Terker; Mellon Capital; Morgan Grenfell; and Sun Banks.

Fixed-income managers: Duff & Phelps; Lord Abbett; and Mellon Capital.

Real estate manager: Citibank.

The master trustee is Mellon; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Dale Kangas, executive secretary; L.H. Edwards, chairman-board of directors; and R.L. Yates, chairman-investment committee.

Texaco Inc.

	($ millions)
Total assets*	2,772
Defined benefit	1,478
Thrift or savings	1,194
ESOP	100
Employer contributions	na
Benefit payments	na
*P&I Age estimate	

WHITE PLAINS, N.Y. — As of Sept. 30, *Pensions & Investment Age* estimates Texaco Inc.'s total employee benefit assets increased 15.5% to $2.772 billion from $2.4 billion a year earlier. Defined benefit assets decreased 1.5% during the same period, to $1.478 billion from $1.5 billion, according to *P&I Age* estimates.

Texaco officials did not provide data for the profile. The following manager list was taken from the 1989 Money Market Directory.

Investment managers: Aetna; Alliance; Chase; Copley; Equitable; Harris Associates; INVESCO; John Hancock; WR Lazard; McCowan; Mellon Capital; J.P. Morgan; New England; Prudential; and Trinity.

The master trustee is Chase; the investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Michael Carlucci, assistant treasurer, and Shelby Faber, manager-pensions and benefits.

Texas County and District Retirement System

	($ millions)
Total assets	1,789
Defined contribution	1,789
Employer contributions	85
Benefit payments	48
Defined contribution asset mix	
Bonds	64.5%
Cash equivalents	0.5%
Mortgage-backed securities	35%

AUSTIN, Texas — As of Sept. 30, the Texas County and District Retirement System's total employee benefit assets increased 19.3% to $1.789 billion from $1.5 billion a year earlier. All the assets are in a defined contribution plan.

Key personnel overseeing the investment management of the fund are J. Robert Brown, director, and Ronald C. Schultz, investment consultant.

Employees Retirement System of Texas

	($ millions)
Total assets	5,108
Defined benefit	5,108
Employer contributions	160
Benefit payments	382
In-house assets	
Equities	1,221
Fixed income	1,700
Short term	197
Passive investments	
Indexed stocks	291
Alternative investments	
Mortgage-backed securities	699
Defined benefit asset mix	
Stocks	21.9%
Bonds	60.7%
Cash equivalents	3.9%
Mortgage-backed securities	13.5%

AUSTIN, Texas — As of Sept. 30, the Employees Retirement System of Texas total employee benefit assets increased 6.6% to $5.108 billion from $4.792 billion as of Aug. 31, 1987. All assets are in an internally managed defined benefit plan.

Equity adviser: INVESCO.

Fixed-income adviser: Duff and Phelps.

The investment consultant is Wilshire.

Key personnel overseeing the investment management of the fund are Clayton T. Garrison, executive director; Nancy G. Goerdel, deputy director-investments; and Stephen P. Arnold, assistant investment officer.

Texas Instruments Inc.

	($ millions)
Total assets	1,329
Defined benefit	865
Profit-sharing	373
401(k)	109
Other*	32
Employer contributions	na
Benefit payments	na
*as of Dec. 31, 1987	
Alternative investments	
Real estate equity	78
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	52%
Bonds	15%
Cash equivalents	16%
Real estate equity	9%
Other	8%
Defined contribution asset mix	
Stocks	4%
Cash equivalents	10%
GICs	14%
Company stock	72%

DALLAS — As of Sept. 30, Texas Instrument Inc.'s total employee benefit assets decreased 11.1% to $1.379 billion from $1.552 billion a year earlier. Defined benefit assets decreased 3% during the same period, to $865 million from $892 million.

The fund has small investments in indexed stocks, venture capital and leveraged buy-outs.

Equity managers: Forstmann-Leff; Tom Johnson; Lieber; McKenzie-Walker; Miller, Anderson; NCNB Texas; and Westwood.

Fixed-income managers: Chancellor and Herbert R. Smith.

Real estate manager: Tomlin.

Other managers: Cross Roads; Forstmann Little; Alan Patricoff; and Wells Fargo.

The master trustee is NCNB Texas; the investment consultants are SEI and Rogers, Casey & Barksdale.

Key personnel overseeing the investment management of the fund are William A. Aylesworth, senior vice president, treasurer and chief financial officer, and Irene M. Leary, manager-employee benefit fund investments.

Texas Municipal Retirement System

	($ millions)
Total assets	1,800
Defined contribution	1,800
Employer contributions	na
Benefit payments	na
Defined contribution asset mix	
Bonds	100%

AUSTIN, Texas — As of Sept. 30, the Texas Municipal Retirement System's total employee benefit assets increased 12.5% to $1.8 billion from $1.6 billion a year earlier. All assets are defined contribution.

The master custodian is First City Bank, Austin; the investment consultant is Duff & Phelps.

Key personnel overseeing the investment management of the fund are Jimmie L. Mormon, director, and Preston G. Craig, investment officer.

Teacher Retirement System of Texas

	($ millions)
Total assets	19,439
Defined benefit	19,439
Employer contributions	700
Benefit payments	944
In-house assets	
Equities	7,465
Fixed income	9,700
Short term	680
Other	1,594
Alternative investments	
Mortgages	1,527
Mortgage-backed securities	1,060
Defined benefit asset mix	
Stocks	38.4%
Bonds	33.1%
Cash equivalents	3.5%
Mortgages	9.2%
Mortgage-backed securities	15.8%

AUSTIN, Texas — As of Sept. 30, the Teacher Retirement System of Texas' total employee benefit assets increased 2.7% to $19.439 billion from $18.93 billion a year earlier. All assets are defined benefit, and are managed internally.

Key personnel overseeing the investment management of the fund are Bruce Hineman, executive director; Joe Perrone, chief investment officer; George Reagan, investment officer-equities; and Jack Cooper, investment officer-fixed income.

Textron Inc.

	($ millions)
Total assets	2,792
Defined benefit	2,126
Profit-sharing	152
Thrift or savings	514
Employer contributions	49
Benefit payments	124
In-house assets	
Equities	445
Fixed income	912
Short term	337
Other	166
Alternative investments	
Oil and gas	25
LBOs	50
Private placements	50
Real estate equity	196
Defined benefit asset mix	
Stocks	34%
Bonds	44%
Cash equivalents	11%
Real estate equity	9%
GICs	2%
Defined contribution asset mix	
Stocks	28%
Bonds	28%
Cash equivalents	9%
GICs	20%
Other	15%

PROVIDENCE, R.I. — As of Sept. 30, Textron Inc.'s total employee benefit assets decreased 3% to $2.792 billion from $2.881 billion a year earlier. Defined benefit assets decreased 3.4% during the same period, to $2.126 billion from $2.2 billion.

Equity managers: Sanford Bernstein; Delaware Investment; NBD; Thorndike, Doran; and Trinity.

Fixed-income manager: NBD.

Real estate managers: Prudential and Textron.

Other manager: Metropolitan Life.

The master trustee is Bankers Trust.

The key person overseeing the investment management of the fund is Richard A. Watson, vice president.

Trans World Airlines Inc.

	($ millions)
Total assets	2,104
Defined benefit	882
Defined contribution	1,116
Thrift or savings	77
401(k)	29
Employer contributions	72
Benefit payments	110
In-house assets	
Equities	338
Fixed income	165
Short term	53
Passive investments	
GICs	130
Alternative investments	
International bonds	17
Real estate equity	19
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	38.3%
Bonds	15.7%
Cash equivalents	26.1%
Real estate equity	2.2%
GICs	14.7%
Defined contribution asset mix	
Stocks	51%
Bonds	10%
Cash equivalents	10%
GICs	21%
Real estate	8%

KANSAS CITY, Mo. — As of Sept. 30, Trans World Airlines Inc.'s total employee benefit assets decreased 18.2% to $2.104 billion from $2.571 billion a year earlier. Defined benefit assets decreased 31.9% during the same period, to $882 million from $1.296 billion. Defined contribution assets decreased 6.6%, to $1.116 billion from $1.195 billion.

Real estate managers: Aetna; Citibank; Coldwell Banker; and Lomas & Nettleton.

GIC managers: Aetna; General American; and New England.

Boston Safe Deposit is the master trustee and global custodian.

The key person overseeing the investment management of the fund is Gary D. Dilley, director-pension finance.

Top 200 funds with defined benefit assets invested in:

GICs

Fund	Assets ($ millions)
Ford Motor	1,500
New York City	1,004
Colorado Public Employees	623
General Electric	600
Eastern Air Lines	540
Detroit Systems	380
Chevron	351
Unisys	238
K mart	191
Allied-Signal	190
Kraft	188
United Methodist Church	171
Trans World Air Lines	130
General Dynamics	120
Philip Morris	120
Southern California UFCW	118
Int'l Operating Engineers	104
Hercules	92
Inland Steel Industries	90
Southern California Edison	90
Southern Baptist Convention	88
Hawaii State Employees	86
Mass. Teachers & Employees	80
Shell Oil	77
United Parcel Service	77
Baltimore City	73
Florida State Board	71
Boilermaker Blacksmith	68
Teamsters, Western	60
Honeywell	57
Atlantic Richfield	53
Sun	53
Bakery & Confectionery	50
Tennessee Valley Authority	49
International Paper	46
Nat'l Electrical Contractors/IBEW	40
Bethlehem Steel	35
Connecticut Trust Funds	35
Armco	24
Delta Air Lines	18
Chrysler	11
Illinois State Universities	10
Alabama Systems	7
Missouri Public School	6
Total	**8,014**

Travelers Insurance Companies

	($ millions)
Total assets	1,830
Defined benefit	1,376
Thrift or savings	286
401(k)	100
TESOP/IRA	68
Employer contributions	64
Benefit payments	60
In-house assets	
Equities	578
Fixed income	170
Short term	99
Other	529
Passive investments	
Indexed stocks	155
Indexed bonds	49
Alternative investments	
International equities	118
International bonds	23
Private placements	34
Real estate equity	70
Mortgages	21
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	42%
Bonds	13%
Cash equivalents	7%
Real estate equity	5%
Mortgages	1%
Annuities	32%
Defined contribution asset mix	
Stocks	6%
Company stock	30%
Other	64%

HARTFORD, Conn. — As of Sept. 30, Travelers Insurance Cos.' total employee benefit assets were virtually unchanged from a year earlier at $1.83 billion compared with $1.823 billion. Likewise, defined benefit assets were almost unchanged at $1.376 billion compared with $1.377 billion a year ago.

All assets are managed internally or by subsidiaries of Travelers.

Connecticut National Bank is master trustee and global custodian.

Key personnel overseeing the investment management of the fund are Richard Shima, executive vice president, Travelers Insurance Cos.; Thomas O. Thorsen, executive vice president Travelers Insurance; and David M. Dunford, president, Travelers Investment Management.

TRW Inc.

	($ millions)
Total assets*	2,054
Defined benefit	1,889
Defined contribution	165
Employer contributions	11
Benefit payments	na
*From Money Market Directory	

CLEVELAND — As of June 30, TRW Inc.'s total employee benefit assets decreased 7.8% to the $2.054 billion listed in Money Market Directory from $2.228 billion as of Sept. 30, 1987. Defined benefit assets decreased 7.4% during the same period, to $1.889 billion (as listed in MMD) from $2.041 billion.

All the information from this profile was taken from the 1989 Money Market Directory.

Managers: Fred Alger; Alliance; Baring America; Baring International; Boston Safe; Campbell Advisors; Hartford Insurance; Hoisington; Investment Counselors of Maryland; Ivory & Sime International; MacKay-Shields; MONY Financial; Morgan Grenfell Investment; J.P. Morgan; PIMCO; Pacific Mutual Life; Texas Commerce; and Westwood.

The master trustee is Boston Safe

Deposit & Trust.

Key personnel overseeing the investment management of the fund are Edward Button, president-TRW Investment Management, and Robert J. Hamje, vice president-TRW Investment Management.

U

UAL Corp.

	($ millions)
Total assets	3,300
Defined benefit	1,800
Defined contribution	1,100
401(k)	400
Employer contributions	120
Benefit payments	100
Passive investments	
Indexed stocks	275
Alternative investments	
Real estate equity	140
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	50%
Bonds	42%
Real estate equity	8%
Defined contribution asset mix	
Stocks	41%
Bonds	39%
GICs	20%

CHICAGO — As of Sept. 30, UAL Corp.'s total employee benefit assets increased 6.5% to $3.3 billion from $3.1 billion a year earlier. Defined benefit and defined contribution assets remained the same at $1.8 billion and $1.1 billion. The assets of the company's 401(k) plan, however, jumped 100% to $400 million from $200 million a year earlier.

Equity managers: Cambiar; First Manhattan; Hotchkis and Wiley; Lincoln Capital; McCowan; Sit; and Weiss, Peck & Greer.

Fixed-income managers: Sanford Bernstein; W.R. Huff; J.P. Morgan; and PIMCO.

Real estate managers: LaSalle; PMRealty; and RREEF.

The master trustee is National Bank of Detroit; the investment consultant is Frank Russell.

The key person overseeing the investment management of the fund is David J. Dykstra, director-pension assets.

Union Carbide Corp.

	($ millions)
Total assets	1,711
Defined benefit	1,711
Employer contributions	0
Benefit payments	83
In-house assets	
Equities	329
Fixed income	1,090
Short term	134
Other	158
Alternative investments	
Private placements	10
Real estate equity	19
Mortgages	100
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	19%
Bonds	64%
Cash equivalents	8%
Mortgages	6%
Real estate equity	1%
Annuities	2%

DANBURY, Conn. — As of Sept. 30, Union Carbide Corp.'s total employee benefit assets increased 2.9% to $1.711 billion from $1.663 billion a year earlier. All the assets are defined benefit.

The master trustee is Manufacturers Hanover; the investment consultant is Benefit Capital Management, Union Carbide's in-house investment management unit.

Key personnel overseeing the investment management of the fund, all Benefit Capital executives, are M.F. Hoben, president; L.R. Fuller, senior vice president-equities; and R. Burstein, senior vice president-fixed income.

Unisys Corp.

	($ millions)
Total assets*	4,281
Defined benefit	2,667
401(k)	1,614
Employer contributions	93
Benefit payments	135
*as of Aug. 31, 1988	
Passive investments	
Indexed stocks	917
Dedicated/immunized	345
GICs	238
Alternative investments	
International equities	141
Venture capital	38
Real estate equity	152
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	72.3%
Bonds	12.9%
Cash equivalents	0.2%
Real estate equity	5.7%
GICs	8.9%

BLUE BELL, Pa. — As of Aug. 31, Unisys Corp.'s total employee benefit assets decreased 8.7% to $4.281 billion from $4.691 billion a year earlier. Defined benefit assets decreased 13.9% during the same period, to $2.667 billion from $3.037 billion.

Equity managers: Domestic — Fred Alger; Nicholas Applegate; BEA Associates; Chase; Concord Capital; Geewax Terker; Independence Investment; Lazard Freres; Liberty Square; NWQ Investment; Pacific Financial Research; PRIMECAP; Rosenberg; Thomson, Horstmann & Bryant; Travelers Options; United Capital; and Wells Fargo.

International — Mellon-Pictet; Mercator; Putnam; and Thorndike, Doran.

Fixed-income managers: Harris; M.D. Sass; and Security Capital.

Real estate managers: Chemical Bank; Coldwell Banker; JMB; LaSalle; and RCB.

Other managers: Aetna; Hancock; and Harris.

The master trustees are Harris Trust for the defined benefit plan and Northern Trust for the defined contribution plan; the global custodians are Harris Trust and Mitsubishi Bank; and the investment consultant is Rogers, Casey & Barksdale.

Key personnel overseeing the investment management of the fund are Leon J. Level, vice president and treasurer, and David White, vice president-capital management and trust investments.

United Food & Commercial Workers & Food Employers (Southern California)

	($ millions)
Total assets	1,464
Defined benefit	1,464
Employer contributions	105
Benefit payments	95
In-house assets	
Short term	65
Other	7
Passive investments	
Indexed stocks	120
Dedicated/immunized	207
GICs	118
Alternative investments	
Real estate equity	28
Mortgages	3
Hedging devices	
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	36%
Bonds	45%
Cash equivalents	9%
Real estate equity	1.8%
Mortgages	0.2%
GICs	8%

CYPRESS, Calif. — As of Sept. 30, The United Food & Commercial Workers & Food Employers' total employee benefit assets increased 0.1% to $1.464 billion from $1.463 billion a year earlier. All of the assets are in a defined benefit plan.

Equity managers: Batterymarch; Cramblit & Carney; Lazard Freres; Oppenheimer; and Wells Fargo.

Fixed-income managers: Pacific Asset; Putnam; and Weiss, Peck & Greer.

Real estate manager: McMorgan.

Other manager: Patterson Capital.

The master trustee is First Interstate Bank; the investment consultant is R.V. Kuhns.

Key personnel overseeing the investment management of the fund are P. Colleen Thompson, administrator, and Joel F. Meltz, controller.

Best corporate treasury departments: June 12.

General Board of Pensions — United Methodist Church

	($ millions)
Total assets	2,903
Defined benefit	1,480
Defined contribution	1,423
Employer contributions	167
Benefit payments	119
In-house assets	
Fixed income	162
Short term	9
Passive investments	
Indexed stocks	262
Indexed bonds	10
GICs	171
Alternative investments	
Real estate equity	50
Mortgages	1
Mortgage-backed securities	24
Hedging devices	
Stock index futures	Y
Defined benefit asset mix	
Stocks	56.3%
Bonds	14.7%
Cash equivalents	11.7%
Real estate equity	4.1%
Mortgages	0.1%
Mortgage-backed securities	1.7%
GICs	11.4%
Defined contribution asset mix	
Stocks	53.6%
Bonds	18.8%
Cash equivalents	10.7%
GICs	13.5%
Other	3.4%

EVANSTON, Ill. — As of Sept. 30, the General Board of Pensions — United Methodist Church's total employee benefit assets decreased 1.8% to $2.903 billion from $2.957 billion a year earlier.

Equity managers: American National Bank, Chicago; Ariel; Capital Guardian; Columbus Circle; Delaware; Fidelity Management Trust; INVESCO; John McStay Investment; Nicholas-Applegate; Olympic Capital; RCM Capital; W.P. Stewart; and Westwood.

Fixed-income managers: CIGNA; Criterion; Lincoln Capital; Mellon Bond; Stein Roe & Farnham; and STW.

Real estate managers: CIGNA Asset and JMB.

The master custodian is Mellon Bank; the investment consultant is Hotchkiss and Associates.

Key personnel overseeing the investment management of the fund are James F. Parker, general secretary; F. Gale Whitson-Schmidt, chief financial officer; and D[illegible] O. Pinney, treasurer.

UMWA Health & Retirement Funds

	($ millions)
Total assets*	4,700
Defined benefit	4,700
Employer contributions	60
Benefit payments	440
*as of Aug. 30, 1988	
In-house assets	
Fixed income	450
Short term	100
Passive investments	
Indexed equities	500
Indexed bonds	450
Dedicated/immunized	1,700
Alternative investments	
Real estate equity	117
Mortgage-backed securities	200
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	40%
Bonds	48.2%
Cash equivalents	7%
Real estate equity	2.5%
Mortgage-backed securities	4.3%

WASHINGTON — As of Aug. 30, the UMWA Health & Retirement Fund's total employee benefit assets decreased 2.6% to $4.7 billion from $4.825 billion as of Sept. 30, 1987. All of the assets are in a defined benefit plan.

Equity managers: Argus; Barrow, Hanley; Concord; Denver Investment; Dreman; Lazard Freres; Loomis, Sayles; T. Rowe Price; Wells Fargo; and Windsor Fund.

Fixed-income managers: Criterion; Loomis; J.P. Morgan; and STW.

Real estate managers: Goldman, Sachs; Metropolitan Life; RREEF; State Street; and TCW.

Options overwrite managers: Loomis and Oppenheimer.

The master trustee is Boston Safe Deposit & Trust.

Key personnel overseeing the investment management of the fund are Charles S. Stephens, director of investments and treasurer, and Terrence L. Bercini, assistant director of investments.

United Nations Joint Staff Pension Fund

	($ millions)
Total assets	7,146
Defined benefit	7,146
Employer contributions	271
Benefit payments	430
In-house assets	
Equities	3,137
Fixed income	2,345
Short term	832
Other	832
Alternative investments	
International equities	1,703
International bonds	1,365
Other international	476
Real estate equity	832
Defined benefit asset mix	
Stocks	44%
Bonds	32.8%
Cash equivalents	11.6%
Real estate equity	11.6%

NEW YORK — As of Sept. 30, the United Nations Joint Staff Pension Fund's total assets decreased 3.8% to $7.146 billion from $7.428 billion a year earlier.

The fund is internally managed but also invests in various unnamed real estate commingled vehicles.

The master trustee is the United Nations Secretary-General; the global custodian is Fiduciary Trust Co. International, which also provides investment advice.

Key personnel overseeing the investment management of the fund are Pierre Henchoz, chief-investment management section; and Henry Ouma, deputy chief; and Cecil Ee, senior investment officer. Mauricio Rezende, Susan Farber, Dagmar Hesse Kreindler and Fernando Torres-Torija are investment officers.

United Parcel Service

	($ millions)
Total assets	1,443
Defined benefit	715
Thrift or savings	720
401(k)	8
Employer contributions	109
Benefit payments	9
In-house assets	
Equities	10
Other	25
Passive investments	
GICs	77
Alternative investments	
Real estate equity	10
Defined benefit asset mix	
Stocks	32%
Bonds	32%
Cash equivalents	22%
Real estate equity	1%
GICs	11%
Other	2%
Defined contribution asset mix	
Stocks	5%

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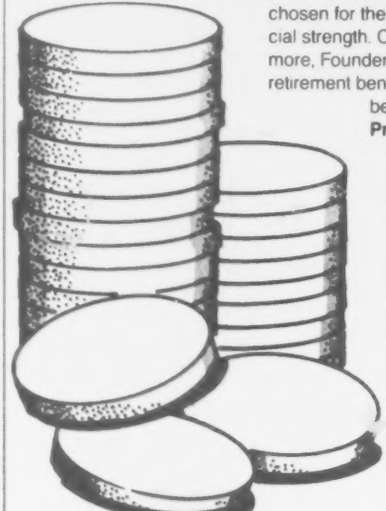

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3033 East First Avenue
Denver, Colorado 80206

Bonds	24%
Cash equivalents	28%
GICs	25%
Company stock	9%
Other	9%

GREENWICH, Conn. — As of Sept. 30, United Parcel Service's total employee benefit assets increased 13.2% to $1.443 billion from $1.275 billion a year earlier. Defined benefit assets increased 5.9% during the same period, to $715 million from $675 million.

Equity and fixed income managers: BEA; Sanford Bernstein; Connecticut National; First Fidelity; Investment Advisers; J.P. Morgan; and Mitchell Hutchins.

GIC managers: Equitable and Metropolitan.

The master trustee is Bankers Trust.

Key personnel overseeing the investment management of the fund are Roger Hostetler, treasury manager; Robert F. Markmann, investments manager; and Bruce Bissell, investments.

United Technologies Corp.

	($ millions)
Total assets	7,000
Defined benefit	5,300
401(k)	1,700
Employer contributions	na
Benefit payments	na
Passive investments	
Indexed stocks	500
Dedicated/immunized	60
Alternative investments	
International equities	400
International bonds	200
Venture capital	75
LBOs	125
Real estate equity	375
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

HARTFORD, Conn. — As of Sept. 30, United Technologies Corp.'s total employee benefit assets increased 0.8% to $7 billion from $6.946 billion a year earlier. Defined benefit assets decreased 3.5% during the same period, to $5.3 billion from $5.495 billion. 401(k) plan assets increased 17.2% to $1.7 billion from $1.451 billion.

United Technologies officials declined to provide an asset mix.

The master trustee and global custodian is Citibank; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are F.M. Crimbly, director-pension investments; R. Cepelak, manager-pension investments; and M. Vrissis, manager-investment administration.

U S WEST Inc.

	($ millions)
Total assets*	8,133
Defined benefit	6,949
Savings and ESOP	1,184
Employer contributions	105
Benefit payments	na

*From Money Market Directory

ENGLEWOOD, Colo. — As of June 30, U S WEST Inc.'s total employee benefit assets increased 1.1% to $8.133 billion from $8.046 billion a year earlier, according to the 1989 Money Market Directory, which provided all the information for this profile. Defined benefit assets decreased 2% during the same period, to $6.949 billion from $7.094 billion.

Managers: Boston Co.; Citibank; Concord; Copley; Denver; Desai Capital; Equitable Real Estate; First Chicago; First Manhattan; Greene; HFS Partners; Jennison; Jones Lang Wootton; Mellon Capital; Metropolitan Life; Morgan Stanley Asset; NISA; Oechsle; Payden & Rygel; PRIMECAP; Retail Property Trust; Sarofim; Sentinel; TCW Realty; and Trinity Investment.

The master trustee for the defined benefit fund is Boston Safe; the custodian for the savings plans is Bankers Trust.

Key personnel overseeing the investment management of the fund are James J. Biundo, assistant treasurer-trust investment management; James R. Belquist, director-trust investment management; and Bruce P. Pflug, manager-trust investment management.

USX Corp.

	($ millions)
Total assets	8,860
Defined benefit	8,550
Thrift or savings	270
401(k)	40
Employer contributions	na
Benefit payments	na
In-house assets	
Equities	4,959
Fixed income	1,690
Short term	1,111
Other	790
Alternative investments	
International equities	150
Oil and gas	40
Private placements	300
Real estate equity	200
Mortgages	50
Mortgage-backed securities	200
Hedging devices	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	58%
Bonds	21%
Cash equivalents	13%
Real estate equity	2%
Mortgages	0.5%
Mortgage-backed securities	2%
Other	3.5%

PITTSBURGH — As of Sept. 30, USX Corp.'s total employee benefit assets decreased 12.7% to $8.86 billion from $10.15 billion a year earlier. Defined benefit assets decreased 12.8% during the same period to $8.55 billion from $9.8 billion. Thrift savings plans assets decreased 10% to $270 million from $300 million a year earlier.

All assets are managed internally by the U.S. Steel & Carnegie Pension Fund.

The custodians are Morgan, U.S. Trust and Bank of New York.

Key personnel overseeing the investment management of the U.S. Steel & Carnegie Pension Fund are Gary A. Glynn, president, and Peter C. Lincoln, vice president-investments.

Utah State Retirement Fund

	($ millions)
Total assets	3,205
Defined benefit	3,190
401(k)/457 plans	15
Employer contributions	120
Benefit payments	90
In-house assets	
Equities	710
Fixed income	1,230
Short term	413
Other	77
Passive investments	
Indexed stocks	620
Alternative investments	
International equities	50
Venture capital	20
LBOs	30
Real estate equity	215
Mortgages	40
Mortgage-backed securities	80
Hedging devices	
Stock options	Y
Defined benefit asset mix	
Stocks	43%
Bonds	35%
Cash equivalents	11%
Real estate equity	8%
Mortgages	1%
Mortgage-backed securities	2%

SALT LAKE CITY — As of Sept. 30, The Utah State Retirement Fund's total employee benefit assets decreased 1.3% to $3.205 billion from $3.246 billion a year earlier. Defined benefit assets decreased 1.7% during the same period, to $3.19 billion from $3.246 billion.

Equity managers: Domestic — Atalanta/Sosnoff; Dimensional; Smoot, Miller, Cheney; Value Line; and Wasatch.

International — State Street Bank.

Real estate managers: Aetna; F.I.A. and JMB.

The master custodian is Chemical Bank.

Key personnel overseeing the investment management of the fund are W. Dan Smith, investment officer, and Richard Cherry, assistant investment officer.

Reprints of articles appearing in *Pensions & Investment Age* are available. For information, contact:
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Chicago, Ill. 60611;
(312) 649-5407

V

Virginia Supplemental Retirement System

	($ millions)
Total assets	8,041
Defined benefit	8,041
Employer contributions	464
Benefit payments	308
In-house assets	
Equities	745
Short term	368
Other	18
Passive investments	
Indexed stocks	1,735
Alternative investments	
Private placements	35
Real estate equity	287
Mortgages	50
Hedging devices	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Defined benefit asset mix	
Stocks	53%
Bonds	30.6%
Cash equivalents	12.1%
Real estate equity	4%
Mortgages	0.3%

RICHMOND, Va. — As of Sept. 30, Virginia Supplemental Retirement System's total employee benefit assets increased 5.7% to $8.041 billion from $7.61 billion a year earlier. All assets are in defined benefit plans.

Managers: Ardsley Partners; Bankers Trust; Sanford Bernstein; Concord; Corinthian; Delaware; DCM; Equitable; Fidelity Management; GAMCO; Hutson; IDS Advisory; Jundt/Capen; LaSalle Advisors; Lehman; Lincoln Capital; Loomis, Sayles; MacKay-Shields; Massachusetts Financial; McKenzie, Walker; Mellon Capital; Merganser; Miller, Anderson & Sherrerd; J.P. Morgan; The New England; Nicholas-Applegate; Pacific Financial; The Phoenix; Prudential; Rosenberg Institutional; RREEF; Security Capital; Schafer Capital; Donald Smith; and Sovran.

The master custodian is Boston Safe Deposit & Trust; the investment consultant is Rogers, Casey & Barksdale.

The key person overseeing the investment management of the fund is Timothy R. Barron, director of investments.

W

Washington State Investment Board

	($ millions)
Total assets	10,867
Defined benefit	10,867
Employer contributions	na
Benefit payments	na
In-house assets	
Fixed income	4,157
Short term	965
Other	958
Passive investments	
Indexed stocks	1,671
Indexed bonds	570
Alternative investments	
Venture capital	240
Oil and gas	37
LBOs	808
Private placements	236
Real estate equity	958
Mortgages	212
Mortgage-backed securities	544
Hedging devices	
Stock options	Y
Stock index futures	Y
Defined benefit asset mix	
Stocks	26.6%
Bonds	31.3%
Cash equivalents	8.9%
Real estate equity	8.8%
Mortgages	2%
Mortgage-backed securities	5%
Other	17.4%

OLYMPIA, Wash. — As of Sept. 30, the Washington State Investment Board's total employee benefit assets increased 2.5% to $10.867 billion from $10.6 billion a year earlier.

Equity managers: Columbia; Hotchkis and Wiley; Mellon Capital; Smith & Co.; United Capital; and Wells Fargo.

Real estate managers: Copley; Equitable; Pacific Mutual; RREEF; and Sentinel.

The master custodian is Bank of New York; the investment consultant is Frank Russell.

Key personnel overseeing the investment management of the fund are David Weig, executive director; Greg Baarson, deputy director; and Marc Fovinci, senior investment officer.

Proxies and corporate governance: April 17.

Top 200 funds with defined benefit assets invested in:

Private placements

Fund	Assets $ millions
Wisconsin Investment Board	2,586
General Electric	1,400
Alabama Systems	957
AT&T	794
State of Michigan	750
New York State Teachers	616
California State Teachers	528
Detroit Systems	485
Kansas Public Employees	353
USX	300
North Carolina Systems	279
Washington State Board	236
Georgia Teachers	215
Minnesota Mining & Mfg.	210
Goodyear Tire & Rubber	174
NYNEX	150
Army & Air Force Exchange	113
Prudential Insurance	111
Ohio Public Employees	100
Honeywell	97
Georgia Employees	76
Los Angeles County	70
Pacific Gas & Electric	63
CIGNA	60
Colorado Public Employees	57
New Jersey Investment	50
Textron	50
Florida State Board	47
Boilermaker Blacksmith	45
Monsanto	40
Atlantic Richfield	35
Virginia Supplement	35
Maine State	34
Travelers Insurance	34
Arkansas Teachers	30
Los Angeles Water & Power	29
E.I. du Pont de Nemours	26
Louisiana State	20
Episcopal Church	15
Ohio State Teachers	11
Tenneco	10
Union Carbide	10
Armco	8
Tennessee Consolidated	6
Commonwealth Edison	4
S. New England Telephone	4
NCR	2
Tennessee Valley Authority	2
World Bank	2
Indiana Public Employees	1
Pennsylvania State Employes	1
Total	**11,329**

Top 200 funds with defined benefit assets invested in:

LBOs

Fund	Assets $ millions
Washington State Board	808
Oregon Public Employes	500
New York State & Local	423
Wisconsin Investment Board	390
AT&T	356
GTE	199
State of Michigan	148
United Technologies	125
Amoco	76
Minnesota Mining & Mfg.	55
Delta Air Lines	50
Textron	50
Colorado Public Employees	45
World Bank	45
Mass. Teachers & Employees	40
Illinois State Board	37
Utah State	30
Honeywell	29
Aluminum Co. of America	26
Grumman	20
ITT	15
Chevron	9
Phillips Petroleum	5
Total	**3,471**

Westinghouse Electric Corp

	($ millio
Total assets	4,8
Defined benefit	3,7
401(k)	1,1
Employer contributions	
Benefit payments	
In-house assets	1,6
Alternative investments	
Real estate equity	5
Defined benefit asset mix	
Stocks	5
Bonds	3
Real estate equity	1
Defined contribution asset mix	
GICs	8
Other	2

PITTSBURGH — As of Sept. 3 Westinghouse Electric Corp.'s tot employee benefit assets decrease 3.5% to $4.8 billion from the $4.9 billion the Money Market Directory r ported the company had as of June 3 1987. Defined benefit assets d creased 7.2% during the same perio to $3.7 billion from $3.989 billion.

The rest of the information for th profile came from the 1989 MMD.

Managers: Advanced; Brandywin Brignoli, Curley & Roberts; Citiban Columbus Circle; MacKay-Shield Mellon Real Estate; Mitchell Hutchin J.P. Morgan; Pioneering; Pittsburg National; Provident Capital; Provide National; Putnam; State Street Ban and Vanguard.

The master trustee is Mellon Ban the investment consultant is Wilsh Associates.

The key person overseeing the i vestment management of the fund Thomas G. Scannell, director-pensi investments.

State of Wisconsin Investment Board

	($ millio
Total assets	16,4
Defined benefit	16,4
Employer contributions	
Benefit payments	
In-house assets	
Equities	8,3
Fixed income	6,3
Short term	1,1
Real estate	
Alternative investments	
International equities	
International bonds	
Venture capital	
LBOs	
Private placements	2,5
Real estate equity	
Mortgages	
Mortgage-backed securities	
Hedging devices	
Bond options	
Fixed-income futures	
Defined benefit asset mix	
Stocks	5
Bonds	36
Cash equivalents	
Real estate equity	2
Mortgages	0
Mortgage-backed securities	2

MADISON, Wis. — As of Sept. 3 the State of Wisconsin Investme Board's total employee benefit asse increased 5% to $16.419 billion fr $15.632 billion a year earlier.

All assets are in an internally ma aged defined benefit plan.

The master custodian is Morg Guaranty.

Key personnel overseeing the i vestment management of the fund a Marshall Burkes, executive direct and Patricia Lipton, assistant executi director.

The International Bank for Reconstruction and Development (World Bank

	($ millio
Total assets	2,6
Defined benefit	2,6
Employer contributions	
Benefit payments	
Passive investments	
Indexed stocks	
Alternative investments	
International equities	
International bonds	
Venture capital	
LBOs	
Private placements	
Real estate equity	
Defined benefit asset mix	
Stocks	4
Bonds	3
Cash equivalents	
Real estate equity	
Other	

WASHINGTON — As of Sept. 3

Equity reduction

Continued from page 13

tions by 11 points: Caterpillar Inc., Peoria, Ill., with $3.61 billion in defined benefit assets; the $3.495 billion Hawaii Employees Retirement System, Honolulu; and the $727 million defined benefit fund of the Annuity Board of the Southern Baptist Convention, Dallas.

The increase makes Caterpillar, now with 75% of its assets in equities, the most bullish of the Top 200 funds, together with the $10.329 billion fund of the University of California, Berkeley. The university, however, brought its allocation during the year 8 points closer to Earth from a stratospheric 83% of assets as of Sept. 30, 1987.

Amoco Corp., Chicago, whose $2.214 billion defined benefit fund also is weighed heavily to equities, increased its allocation during the year by three points, to 66%. But Marvin Damsma, director-pension fund administration, said, "There was no conscious change."

"We've always had a lot in equities, probably more than the typical fund."

A few funds stood pat with their equity allocations. BP America Inc., Cleveland, kept its equity position at 65% of its $1.156 billion in defined benefit assets.

A week after the crash, the fund's pension committee happened to hold its scheduled quarterly meeting, providing "a tremendous opportunity in light of the downfall in the market" to make any changes, said Dennis J. Hamilton, director-pension investments. "If we wanted to make a change, there was the group to do it."

"But we didn't panic into changing our long-term asset allocation," he added. "We didn't make any changes as a result of the crash."

"We felt we had to stress the long term; our equities had historically the highest degree of volatility; and the crash confirmed that," he said.

The fund move ahead with previously planned changes within its equity allocation. BP America raised its international equities to 13% from 10% of assets and it started in-house asset management for part of its actively run domestic equities, taking $200 million from external equity managers.

For the year, 55%, or 94, of the funds showed declines in asset growth, using the formula of asset change, net of contributions and benefit payments.

By contrast 45%, or 77 funds, showed increases in asset growth, as defined by the formula. Insufficient information was available on the other 29 funds in the Top 200.

Corporate funds as a group performed worse than the Top 200. Of the corporate funds, 75%, or 71 of the 95 corporate funds for which data are available, show decreases in asset growth, while 25%, or 24 funds, show increases.

The reason appears to lay in their higher allocation equity. Of the Top 200, 19 funds, all corporate except for the University of California, have equity positions of 60% or more.

By contrast, among the nine Taft-Hartley funds, the highest equity allocation is the 43% of the $1.436 billion IAM National Pension Fund, Washington, which is down from the 49% it had allocated as of the Sept. 30, 1987. The $1.464 billion defined benefit fund of the United Food & Commercial Workers, Southern California, Cypress, Calif., which at 50% had the highest equity allocation in 1987, reported only a 36% position in 1988.

Of the 67 public funds in the Top 200 for which information is available, the $8.8 billion Oregon Public Employes Retirement System, Salem, had the highest equity allocation at 58% as of Sept. 30, up 1 point from the 57% the previous year.

Only 13 of the public funds, excluding the University of California, had equity allocations of 45% or more as of last Sept. 30, while 16 of the funds had allocations of 30% or less.

By contrast, the year before, 22 of the public funds had equity allocations of 45% or more, the highest then being the Maryland state fund at the previously mentioned 64%, while 13 had allocations of 30% or less.

But the data show it's difficult to conclude that funds with high equity allocations did worse than funds with lesser positions.

Owens-Illinois, which increased its already high equity exposure, showed a 7% increase in net growth of its pension fund, one of the highest growth rates among the Top 200 funds.

Of the five public funds with equity allocations of 50% or more in both 1987 and 1988, the fund of the $3.08 billion State Universities Retirement System of Illinois, Champaign, net of contributions and benefit payments, was up 5.14%; the $8.041 billion Virginia Supplemental Retirement Systems, Richmond, was up 3.61%; while the $2.774 billion Los Angeles Fire & Police Pension System, the $22.779 billion New York State Teachers Retirement System, Albany, and the Oregon fund were down slightly, 0.07%, 0.42% and 1.7%, respectively.

Of the corporate funds, Martin Marietta's fund fell 2.17%, net of contributions and benefit payments, despite its reducing its already low equity position and increasing an already high cash allocation.

BP America's fund, however, which as mentioned kept a high equity position, had a 4.15% net increase in value during the same period. ■

total employee benefit assets of The International Bank for Reconstruction and Development (The World Bank) increased 3.3% to $2.687 billion from $2.6 billion a year earlier. All assets are defined benefit.

According to the 1989 Money Market Directory, the fund's managers are: Bridgewater; Delphi; Fischer, Francis, Trees & Watts; Geewax, Terker; JMB; Lincoln Capital; Loomis, Sayles; NCNB; Quest; RCB Trust; and State Street Bank.

The master trustee is State Street rank; the global custodian is Northern Trust; the investment consultant is Strategic Investment Partners.

Key personnel overseeing the investment management of the fund are Nestor V. Santiago, pension plan administrator, and Kelda J. Caldwell, financial analyst.

Top 200 funds with defined benefit assets invested in:

Dedicated/immunized bonds

Fund	Assets $ millions
Teamsters, Western	3,940
Minnesota State Board	3,608
Ameritech	3,100
Southwestern Bell	2,066
General Electric	2,000
Navistar	1,772
UMWA	1,700
Aluminum Co. of America	1,253
Caterpillar	1,000
American Airlines	750
Tennessee Valley Authority	518
Armco	436
Inland Steel Industries	428
Nevada Public Employees	427
Deere	425
Hercules	368
Mobil Oil	359
Unisys	345
Raytheon	330
Phillips Petroleum	225
Prudential Insurance	211
Southern California UFCW	207
Ohio State Teachers	205
Milwaukee City Employes	168
Pennsylvania Public School	164
Boilermaker Blacksmith	113
Teamsters, Central States	75
Eli Lilly	74
Bakery & Confectionery	70
United Technologies	60
Baltimore City	48
Total	26,445

Xerox Corp.

	($ millions)
Total assets	2,724
Defined contribution/profit-sharing	2,157
Thrift or savings/401(k)	567
Employer contributions	100
Benefit payments	na
Defined contribution asset mix	
Stocks	59%
Bonds	10%
Cash equivalents	20%
Real estate equity	11%

STAMFORD, Conn. — As of Sept. 30, Xerox Corp.'s total employee benefit assets decreased 0.4% to $2.724 billion from $2.734 billion a year earlier. All assets are defined contribution.

Equity managers: Domestic — Ardsley Partners; Charter Oak; Equitable; First Pacific; Geewax, Terker; GeoCapital; Hellman, Jordan; MacKay-Shields; Management Asset; Pilgrim Baxter Greig; Quest; RCM; Schafer; Donald Smith; Solomon; Sound Shore; Steinberg Asset; Trinity; TCW; Tweedy, Browne; and Westwood.

International — Bleichroeder; Capital Guardian; Fidelity International; and Grantham, Mayo, Van Otterloo.

Fixed-income managers: Huff; Jennison; RCM; and Solomon.

Real estate managers: JMB; RREEF; and TCW.

Oil and gas manager: TCW.

Private placements manager: TCW.

Venture capital manager: Horsley Keogh.

The master trustee and global custodian is State Street Bank; the investment consultants are Frank Russell and Collins Associates.

Key personnel overseeing the investment management of the fund are Robert R. Evans, assistant treasurer-employee benefit assets; Jainel M. Buell, manager-trust investments; Gerald J. Paolini, manager-trust investment strategy; and Toni S. Hanna, trust investment analyst.

LBOs still hot

Continued from page 13

said had not changed from 1987.

The question of whether it's a good idea for corporate funds to invest in a process that could eventually turn on the fund's sponsor also is dismissed quickly by Mr. Damsma.

"It's like asking us why we sold that stock, since it hurt the share price. The only difference with an LBO is that it speeds up the process," he said.

John Myers, executive vice president of General Electric Investment Co., Stamford, Conn., also said he thinks leveraged buyouts are a benefit to the general economy. "Investing in these transactions creates value and can only be a good," he said. "They increase competition in the marketplace. It's a question of what's for the greater good. I think what's important is that the U.S. have the most competitive industrial base in the world. That would, among other things, result in a bigger U.S. job base."

Although Mr. Myers acknowledged the $21.1 billion GE defined benefit fund invested with Forstmann Little & Co. and Warburg Pincus & Co., both in New York, he declined to specify the amount invested. In addition, he said those investments "could be interpreted as LBOs, but are more like a preferred stock position."

The GE pension fund also had $1.4 billion in private placement investments as of Sept. 30.

Among the funds that increased their investments in leveraged buy-outs, and the amount of the increase, were: State of Wisconsin Investment Board, $246 million; Oregon Public Employes Retirement System, $238 million; New York State & Local Retirement Systems, $205 million; American Telephone & Telegraph Co., $150 million; GTE Corp., $63 million; and United Technologies Corp., $46 million.

Funds that reported leveraged buy-out investments for the first time, and the amount they invested, include the Public Employees Retirement Association of Colorado, $45 million; Chevron Corp., $9 million; and Phillips Petroleum Co., $5 million.

Among the 14 funds reporting increases in private placements, and the amount of the increase, were: the State of Wisconsin Investment Board, $207 million; Alabama Retirement Systems, $18 million; and E.I. du Pont de Nemours Co. Inc., $13 million.

Among the 14 funds that made their first investments in private placements, and the amount invested as of Sept. 30, were: Kansas Public Employees' Retirement System, $353 million; Washington State Investment Board, $236 million; NYNEX Corp., $150 million; and Tenneco Inc., $10 million.

Those funds reporting decreases in private placements as of Sept. 30, and the amount of the reduction, include: State of Michigan Employees, $250 million; Florida State Board of Administration, $208 million; Los Angeles County Employees' Retirement System, $73 million; and California State Teachers' Retirement System, $7 million. ■

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PROPERTY

Real estate assets up 26%

Public, utility plans lead

By Steve Hemmerick

Large public funds and regulated utilities accounted for $5.54 billion or 76% of the total increase in real estate equity investments among the Top 200 pension funds for the year ended Sept. 30, a *Pensions & Investment Age* survey shows.

Large corporate and other defined benefit funds increased their equity real estate holdings by a smaller $1.74 billion during the same one-year period.

Top 200

P&I Age's annual survey of the Top 200 pension funds found 128 of those funds held a total of $35.324 billion in equity real estate, a total increase of $7.285 billion, or almost 26%, from the $28.039 billion reported as of Sept. 30, 1987.

The actual increase in equity real estate investments among the Top 200 funds may have been larger. The 1988 data include only defined benefit assets, while the previous year's totals also included defined contribution assets.

As a result, some large defined contribution plans with investments in equity real estate — such as the $1.417 billion Bechtel Power Corp. fund, San Francisco; the $67.141 billion Teachers Insurance and Annuity Association — College Retirement Equities Fund, New York; and the $2.157 billion Xerox Corp. fund, Stamford, Conn. — were left out. Those funds reported total equity real estate investments of $1.895 billion as of Sept. 30, 1987.

In addition, some funds were deleted from the rankings of the Top 200, thus eliminating their real estate equity assets from the list, although the fund itself may still maintain those investments.

Of the 128 funds with equity real estate assets as of Sept. 30, the average investment was 5.1% of total defined benefit assets. For the previous year, 134 of the Top 200 funds invested an average of 4.8%.

The survey also found that $18.818 billion was invested in mortgages by the Top 200 funds.

Only 61 of the Top 200 funds invested at all in mortgages, and the average investment was 4% of assets.

A key reason for the decline in mortgage investments may again be because this year's list doesn't include defined contribution plans.

TIAA-CREF, for example, held $16 billion in mortgages as of Sept. 30. With the addition of the TIAA-CREF portfolio, total investment in mortgages by the Top 200 funds would have increased 12%.

Some individual funds held a substantially higher percentage of their assets in equity real estate than the average.

American Telephone & Telegraph Co., New York, which again this year had the largest total dollar investment in equity real estate at $3.7 billion, had slightly more than 10% of its assets in that class.

While public funds and regulated utilities continued to do most of the investing in equity real estate, when compared with the overall plan assets of these groups, the percentage increases were modest, said Alan Emkin, president of Pension Consulting Alliance, Glendale, Calif.

He described the increases in real estate equity by corporate defined benefit plans as "slight."

The emphasis by public funds to increase their investment in equity real estate partly reflects the fact large public funds have been using cash flow to begin investing in equity real estate, and they did so later than their corporate counterparts, Mr. Emkin said.

Because of the lag, many public funds still have not reached their target goals for real estate investment.

"What I think you are seeing is their growing sophistication and familiarity with the asset class, along with the extraordinary large cash flows of public funds," Mr. Emkin said.

"They couldn't have made those investments five years ago be-

Continued on page 71

Top 200 funds with defined benefit assets invested in equity real estate

Fund	Assets $ millions
AT&T	3,678
California Public Employees	2,782
General Electric	1,900
Ohio State Teachers	1,835
Washington State Board	958
Connecticut Trust Funds	912
California State Teachers	855
United Nations Joint Staff	832
NYNEX	809
Pennsylvania Public School	675
Southwestern Bell	660
Ameritech	650
Illinois Teachers	650
Teamsters, Western	620
Florida State Board	577
Pennsylvania State Employes	558
Westinghouse Electric	555
Ford Motor	500
Prudential Insurance	477
Minnesota State Board	465
State of Michigan	448
Illinois State Universities	406
Eastman Kodak	400
Shell Oil	400
Oregon Public Employes	375
United Technologies	375
Wisconsin Investment Board	373
Exxon	370
Ohio Public Employees	368
Colorado Public Employees	363
New York State & Local	347
Allied-Signal	338
Illinois Municipal	295
Virginia Supplemental	287
Metropolitan Life	273
Ohio School Employees	269
Monsanto	260
Illinois State Board	254
Honeywell	244
Boilermaker Blacksmith	241
Chevron	231
Alaska Retirement Systems	231
Pacific Gas & Electric	226
Utah State Retirement	215
Kansas Public Employees	206
Caterpillar	203
USX	200
Textron	196
Maryland State	183
North Carolina Systems	182
Sun	181
GTE	176
Los Angeles County	171
Nevada Public Employees	167
Digital Equipment	154
Minnesota Mining & Mfg.	152
Unisys	152
Atlantic Richfield	149
World Bank	146
UAL	140
Nat'l Electrical Contractors/IBEW	137
Int'l Paper	135
RJR Nabisco	127
San Francisco Employees	125
Hawaii State Employees	121
Eastern Air Lines	120
Hercules	120
Ohio Police & Firemen	120
UMWA	117
ITT	106
Inland Steel Industries	106
Amoco	105
Aetna Life & Casualty	99
Owens-Illinois	98
Army & Air Force Exchange	97
Grumman	95
Kentucky Retirement	91
NCR	91
CIGNA	90
Philip Morris	90
Chrysler	88
Philadelphia Municipal	85
FPL Group	82
S. New England Telephone	79
Aluminum Co. of America	78
Texas Instruments	78
BP America	71
Travelers Insurance	70
Goodyear Tire & Rubber	65
E.I. du Pont de Nemours	64
Detroit Systems	62
Eli Lilly	59
Chicago Municipal	56
Los Angeles Fire & Police	53
Southern California Edison	52
United Methodist Church	50
K mart	49
Baltimore City	45
Mass. Teachers & Employees	45
IAM National Pension Fund	44
Phillips Petroleum	42
Kentucky Teachers	41
Sears, Roebuck	40
Delta Air Lines	35
Louisiana State	34
New York Life	33
Milwaukee City Employes	31
Deere	30
Southern California UFCW	28
Maine State Retirement	23
Southern Baptist Convention	23
New York State Teachers	21
Trans World Air Lines	19
Union Carbide	19
Int'l Operating Engineers	18
American Electric Power	17
Raytheon	15
Episcopal Church	14
Teamsters, Central States	14
Tennessee Valley Authority	11
American Airlines	10
United Parcel Service	10
Armco	9
State of Delaware	9
Alabama Systems	8
Indiana Public Employees	4
Georgia Employees	2
Georgia Teachers	2
Total	36,324

Prime Property's apartment buy is a first

The Lora Lake Apartment Complex, Burien, Wash., was one of two residential sites ... chased for $16.4 million by Equitable Real Estate Investment Management Inc., Atlanta, for its $3 billion Prime Property Fund. The acquisition, which included the Holly Ridge complex, also in Burien, marked the first all-residential properties owned by the open-end fund.

GM fund to finance mortgages for Crow

By Andrew Reinbach

NEW YORK — A mortgage-financing plan developed by officials of the $32.5 billion General Motors Corp. pension fund could result in GM's pension fund providing about 5% of the annual financing needs of Dallas developer Trammell Crow Co.

The two-tier arrangement calls for the GM fund to provide about $112 million in first mortgages, although the program involves both first and second mortgages, in return for Crow's promise of delivering a standardized financial structure from the construction lender. The construction lender, in turn, gets a guaranteed return on its investment, while Crow gets reliable financing for its projects.

The first mortgage is a 10-year, interest-only "bullet" loan, payable monthly; the interest rate floats above 10-year Treasury notes. The mortgage has a minimum payment of 9.25% per year and covers 60% of the anticipated development cost.

The second mortgage pays a minimum of 5% per year, but earns 9.5%; the balance accrues to a prepayable "balloon."

Also included in the second mortgage note are two participation features: One gives GM 50% of the projects' gross revenues above a benchmark that was not revealed in the exemption request; the other gives GM additional interest equal to a portion of the projects' income streams from rent increases.

The mortgages cover four projects: Chase at Bethesda, a $46.3 million project developed by Crow, Terwillinger & Micheaux Inc. in Bethesda, Md.; Sherwood Forest, a $27.5 million project developed by Crow, Terwillinger & Speicher Inc. in Coral Springs, Fla.; Vinings II, a $17.5 million project developed by the same group in Boca Raton, Fla.; and Wood Green, a $23.35 million project developed by Crow, Terwillinger Partners Inc. in Atlanta.

Crow, Terwillinger is the overall corporate umbrella under

Continued on page 71

WRAP-UP

Sale/leaseback set

ROCKVILLE, Md. — Marriott Corp. is selling its 800,000-square-foot corporate headquarters here to Edward J. Minskoff Equities, a New York-based real estate developer, for an estimated $175 million.

Marriott will lease the old building from Minskoff until a new headquarters building in nearby Germantown, Md., is completed.

Neither party would reveal the size of the transaction, but a Marriott official confirmed $175 million is "in the ballpark." Comparable properties in the area are selling for $175 per square foot to $250 per square foot, or for between $140 million and $200 million, area real estate professionals say. The building was appraised for $45.4 million by Montgomery County in December 1987.

GTE names new exec

STAMFORD, Conn. — Glenn "Sam" Hunter Jr. joined GTE Corp. in November as vice president-real estate, replacing Larry B. Kimbler, who has left to start his own firm, although he is working on a GTE project until year end.

Mr. Hunter formerly was responsible for corporate real estate activities at Hughes Aircraft Co., El Segundo, Calif., a post he had held for six years. Previously, he had been a broker for New York-based Cushman & Wakefield, Inc. Ferris Trimble has been named acting manager-real estate at Hughes.

Mr. Kimbler left GTE to open Kimbler/Openshaw & Associates, a real estate development, investment and consulting firm.

Partnership approved

DALLAS — The CORE Group Trust, a real estate partnership between the Public Employees Retirement System of Nevada and the City & County of San Francisco Employees Retirement System, has been given the green light to begin investing.

The investment plan was completed and signed in November by Laura Wallace, investment officer for the $2.7 billion Nevada fund, and DeWitt Bowman, chief investment officer of the $3.6 billion San Francisco fund, who will soon become investment manager of the $46 billion California Public Employees' Retirement System.

Lehndorff & Babson Real Estate Counsel, Dallas, is trustee and has discretionary authority to invest according to the plan's guidelines.

The plan calls for investment in "premier" large office buildings or retail properties, said Ms. Wallace. Expected return, adjusted for inflation, will be 4.5%, she said.

Mr. Bowman said the investments will be in the minimum range of $30 million to $40 million and have geographic guidelines he would not specify.

Each fund contributed $100 million. CORE is looking to add three partners — two by the end of the year and one next year, Ms. Wallace said. Each partner would contribute $100 million, she said, with a target of a $500 million fund.

She said the partnership allows the $2.7 billion Nevada fund to have access to a real estate m it otherwise wouldn't be ab touch.

Fund acquires mal

FOREST PARK, Ill. — The est Park Mall, a 400,000-sq foot enclosed shopping cent suburban Chicago, has bee quired by Bennett & Kahnw Realty Advisors on behalf pension client.

The mall, which is anchor Venture, Courtesy Home C T.J. Maxx and Perry Drugs, sold by the Lexington Co., acquired the malls when it b the assets of the Harry Cha Co. about 18 months ago.

Bennett & Kahnweiler pla renovate the center, impro and updating the interior an terior.

Appraisal errors to

SCOTTSDALE, Ariz. — praisal reports from 500 le contain an average of 2.4 e per report, a survey by the tional Association of Review praisers and Mortgage derwriters here found.

The survey covered both mercial and residential mort generated by banks, savings loans and mortgage companie

Top 200 funds with defined benefit assets invested

Mortgages

Fund	As $ mill
California Public Employees	2
New York State & Local	2
New York State Teachers	2
Texas Teachers	1
Alabama Systems	1
State of Michigan	1
Ohio State Teachers	1
California State Teachers	
Colorado Public Employees	
Pennsylvania State Employes	
Detroit Systems	
Oregon Public Employes	
General Electric	
Hawaii State Employees	
Arizona State Retirement	
Pennsylvania Public School	
Alaska Retirement Systems	
Washington State Board	
Int'l Operating Engineers	
Nevada Public Employees	
Bakery & Confectionery	
Connecticut Trust Funds	
Los Angeles County	
Wisconsin Investment Board	
Kentucky Teachers	
Nat'l Electrical Contractors/IBEW	
Union Carbide	
New York City	
Owens-Illinois	
Ameritech	
Teamsters, Western	
USX	
Virginia Supplemental	
Arkansas Teachers	
Sears, Roebuck	
Chicago Municipal	
Ohio School Employees	
Goodyear Tire & Rubber	
Monsanto	
Utah State	
Minnesota Mining & Mfg.	
Ford Motor	
Sun	
Travelers Insurance	
Aetna Life & Casualty	
Southern Baptist Convention	
Georgia Teachers	
Baltimore City	
San Francisco Employees	
Atlantic Richfield	
Ohio Police & Firemen	
Tenneco	
Shell Oil	
Philadelphia Municipal	
Georgia Employees	
Chevron	
Chrysler	
Southern California UFCW	
International Paper	
Tennessee Consolidated	
United Methodist Church	
Total	18

Metropolitan Life Insurance Company, Carlson Real Estate Company, and Carter & Associates

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Risky proposition

Study challenges stock expectations

By Barry B. Burr

Stocks are becoming less risky and, consequently, offering a lower return, according to a new analysis that challenges the return expectations established by the original Ibbotson and Sinquefield study.

Lawrence R. Zielinski, managing director at Investment Management Controls, Norwalk, Conn. — a consulting organization and division of Janney Montgomery Scott Inc., Philadelphia — based the conclusion on an analysis of capital market returns in the 25-year period ended Dec. 31, 1987. An update to include 1988 returns would not alter his conclusion, he said.

But an executive at Ibbotson Associates Inc., Chicago, which updates the Ibbotson-Sinquefield study, questioned a conclusion based on such a relatively short period.

"If you believe that the market got less risky, what happened in 1987?" asked Laurence B. Siegel, Ibbotson Associates managing director, referring to the October market crash in that year.

In fact, he said, "1987 was the most unusual year since the 1930s. It might mean you should pay more attention to the 1920s and 1930s."

According to Mr. Zielinski, in the 25 years through 1987, the real, or inflation-adjusted, return on stocks, as represented by the Standard & Poor's 500 Stock Index, was a compound annual 3.48%. Mr. Zielinski uses the return on Treasury bills as a proxy for inflation.

He contrasted the more recent returns to those of the original study of capital market returns by Roger G. Ibbotson, now a professor of finance at Yale University's School of Management, New Haven, Conn., and Rex A. Sinquefield, now co-chairman and chief investment officer, Dimensional Fund Advisors Inc., Santa Monica, Calif.

In the latter study, from 1926 through 1974, stocks returned a real 6.1%. Including subsequent years doesn't change the conclusion; stocks from 1926 through 1987 returned a real 6.2%.

For the same periods, stock-market risk also has diminished, Mr. Zielinski added.

In the period of the Ibbotson-Sinquefield study, the standard deviation was 22.5, he said. By contrast, in the more recent 25-year period, the standard deviation was 15.4, or nearly one-third less.

"Someone could make the argument that stocks have become a less risky asset class," Mr. Zielinski said. "Stocks offer less return and have a lower standard deviation."

"I'd attribute that to include the institutionalization of the market," he added. "It's a little more efficient."

"In asset planning, it might be wise to temper one's exuberance of returns one can expect to achieve," he said. "The returns of the 1980s everyone recognizes as historically high." Rather than temper expectations with the historical Ibbotson-Sinquefield average, Mr. Zielinski suggests investors give more weight to returns in the recent 25 years.

For support, he cited the evolution of changing economic fundamentals since the early 1960s. These trends will continue to influence the 1990s and beyond, he said.

Among them, he noted the increasingly competitive world economy and the fleeting domi-

Continued on page 74

Changing risk and return

	Returns				Standard deviations	
	Real		Nominal			
	1926-1974	1987-1987	1926-1974	1987-1987	1926-1974	1987-1987
Stocks	6.1%	3.5%	8.5%	8.3%	22.5%	15.4%
Treasury bonds	1	0.8	3.2	6.2	5.4	10.4
Treasury bills	0.1	1.2	2.2	6.9	2.1	6.8
Inflation	NA	NA	2.?	5.7	4.8	1.2

Source: Investment Management Controls, Norwalk, Conn.

FEATURE

Yield curves offer a look at world

By Ray Dalio

In light of all the attention that has been given to the yield curve as an economic indicator, it's surprising little has been said about yield curves abroad and their implications for global investing.

Just as the slope of the yield curve in the United States is an excellent indicator of the tightness of domestic monetary policy, yield curves of other major industrial democracies are wonderful indicators of their monetary policies.

Looked at in isolation, they are interesting leading indicators of each country's economic growth and inflation rates. Looked at together, they are a virtual oracle for understanding the mystery of global flows.

In managing our global bond and currency accounts, we pay an awful lot of attention to what we call "the world yield curve" and each country's yield curve in relation to it. (The world yield curve, in this case, represents the weighted average yield curve of the so-called G-5 countries — the United States, which accounts for 42%; Japan, 21%; West Germany, 15%; and the United Kingdom and France, 11% each.)

The yield curves of the United Kingdom and France are inverted, meaning short-term interest rates are higher than long-term rates. Japan and West Germany have positive sloping curves, meaning rates are behaving as expected. Long-term rates are higher than short-term rates. In the United States, the yield curve, by my measure, is close to inverting. (For a view that the U.S. yield curve already has inverted, and the economic implications, see Portfolio Management, *Pensions & Investment Age*, Jan. 9).

Among other major countries, the yield curve of Australia is inverted, while Canada's, much like that of the United States, is flat.

I've noticed that, just as shifts in the U.S. yield curve have reliably signaled changes in the U.S. economy's growth rate with about a one-year lead time, so changes in the world yield curve have preceded changes in global economic activity by about a year.

I've also noticed shifts in one country's yield curve in relation to the world yield curve reflect shifts in relative monetary policies that are excellent measures of leading indicators of currency changes. Because together they are excellent leading indicators of the direction of world economic growth and the direction of currencies, they are practically all one needs to successfully make duration and currency shifts in a global bond portfolio.

Before describing what they are now doing and showing, it is important to establish the setting. G-5 central bankers agree on two things:

- With world rates of capacity utilization and unemployment where they are, world economic growth will have to slow to around 2.5% on average for the expansion to continue, and
- To reduce the dangerously large current account imbalances, countries with surpluses (e.g., Japan and West Germany) will have to grow faster than average (i.e., 3% to 3.5%), while countries with deficits (e.g., the United

Continued on page 74

Ray Dalio is president of Bridgewater Associates Inc., Wilton, Conn.

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MARKET BEAT

First Kentucky Trust Co.:

No recession ghosts

By Curtis Vosti

It's time for interest rates to drop, according to Stan A. Rourke, senior vice president and senior investment officer of the First Kentucky Trust Co., Louisville.

Mr. Rourke thinks interest rates will be the key to market and economy performance in 1989, and he thinks the Federal Reserve Board will ease up in the first or second quarter after two years of pressure.

"You can begin to see the light at the end of the tunnel. If interest rates come down to 7% or 7½%, that would be marvelous," he said.

"Neither (Fed Chairman Alan) Greenspan nor (President-elect George) Bush wants a recession, and with all the debt around, the economy can't afford one," he said.

Inflation probably will have structural increases, Mr. Rourke said, because of the changes in the economic structure in the past decade. But he added, "A little bit of inflation is not going to kill us."

The trade deficit should be kept in check by a Congress and a president who will be watching it closely, Mr. Rourke said. "The key is not to let it grow," he said.

First Kentucky, along with its sister firm, First Kentucky Co., manages about $2.5 billion in tax-exempt assets for institutions other than itself, according to Mr. Rourke.

The firm looks at 7,000 stocks, and chooses to buy and sell after running them through various screens, looking for value based in part on yields, fundamentals and a historical look at the individual company.

"That doesn't mean that we don't want growth," he said. The firm will buy a growth company, such as **Gannett Co. Inc.**, he said, in special situations even though it might not come out of its screens.

The firm looks at the historical activity of a stock to make buy decisions at the low end of the range of the stock's historical valuations, he said. Sell decisions are typically made when the stock reaches the high point of that valuation.

"Cheap is better than exciting, momentum or whatever," he said. "Selling is a harder decision to make than buying."

In 1988 the company's screens indicated technology stocks were a cheap buy, and they still are attractive, Mr. Rourke said. "Steels, chemicals and some papers have been interesting," he said.

"We don't go out and say that we have to have 22% of something," he said, but if the company's screens indicate it, the firm will hold a market-weighted portfolio of a specific area.

An example of that in 1988 was consumer stocks, "even though the story was that they had been played out," Mr. Rourke said.

Buys of the past year include drug companies like **Pfizer Inc.**, **Bristol-Myers Co.** and **Abbott Laboratories**, he said. Others include **Hewlett-Packard Co.**, **General Motors Corp.**, **Fleetwood Enterprises Inc.** and **Fort Howard Corp.**

Stocks the company has sold include **Waste Management Inc.**, **Browning-Ferris Industries Inc.**, **American Telephone & Telegraph Co.**, **Bell Atlantic Corp.**, **Digital Equipment Corp.** and **Apollo Computer Inc.**

The company decides to buy after its systems alert the seven-member investment committee, chaired by Mr. Rourke, that the stock has reached the high range of historic performance.

"You have a system that makes you look hard at things if they reach extreme levels," he said. "It takes away the emotions."

The firm typically will hold a stock for at least six months. It may hold a stock longer if its screens indicate it isn't "wildly overvalued," Mr. Rourke said.

Stocks the firm has bought and probably will hold for a while include Mr. Rourke's favorite, **Berkshire Hathaway Inc.** "It's one of the better growth companies based on management abilities," he said.

Others to be held include **Bristol-Myers** — "It's almost unbelievable how cheap it is" — Abbott Labs and GM.

In the five years ended Sept. 30, the firm had a compound annual return of 12.5%, he said. For the same period, the Standard and Poor's 500 Stock Index returned 14.7%.

For the 10 years ended Sept. 30, First Kentucky returned 14.6%, according to Mr. Rourke. For the same period, the S&P 500 returned 15.4%.

He said for year end 1988, the firm returned 8.1%. The S&P 500 returned 16.56%.

"It wasn't a great year for us," Mr. Rourke said, "We didn't really get a lot of takeovers." He said Fort Howard was the only one. It's hard to take full advantage of the takeover frenzy, he said.

"You can't sit down and rationalize that this is going to be a takeover year (of a particular stock)," he said. "You don't have any system at all that way."

Stan A. Rourke thinks the Federal Reserve will ease interest rate pressure.

Double plans are popular

DETROIT — A survey of 177 companies in the Great Lakes region indicates that since 1978, the number of companies offering both a defined benefit and defined contribution pension plan has doubled.

The survey, done by the Detroit office of Coopers & Lybrand, found that 30% of the respondents offered a defined contribution plan only; 22% offered only a defined benefit plan; and 48% offered both.

"One could deduce that the new defined contribution plans are supplementing rather than replacing defined benefit plans," the survey states. "Much of what is written today could indicate a trend away from offering defined benefit plans. Our data do not indicate the number of defined benefit plans are shrinking in number."

For those companies offering both plans, the replacement ratio — the percentage of final pay received by the retiree — is higher than for those that offer just one plan, the survey indicated.

In fact, each plan is competitive with the benefits offered by those companies which feature just one plan.

According to the survey, the average defined benefit plan offered two to four times the replacement amount when compared to the average defined contribution plan. More than 80% of the defined benefit plans calculate benefits using the average compensation during the highest five consecutive years of service, according to the survey.

Because the survey did not include contributions from profit in the calculation, the replacement value of defined contribution plans may be understated, the report states.

"Even allowing for this possible understatement, we believe that those employers offering defined benefit plans as their exclusive retirement vehicle replace a higher level of income at all years of service and pay levels than employers using only a defined contribution plan," the commentary said.

The survey also indicated more than half of the companies do not currently pay for retiree medical benefits.

Risky challenge

Continued from page 73

nance of the U.S. economy — and the emergence of Japan and Germany, among others, as formidable competitors.

Mr. Siegel, however, said looking at a shorter time frame than the full historical period might lead to a deceptive conclusion.

"There is no statistical significance to picking a 25-year period," Mr. Siegel said. "There is no evidence the risk premium between stocks and bills has changed."

Taking 20-year periods, which "seems like a long time also," Mr. Siegel said from 1962 to 1981, the risk premium, or rate of return on stocks adjusted for the return on Treasury bills, was negative — "because you are starting at the top and ending at the bottom."

But taking 1966 to 1985 gives the reverse: a very high risk premium.

"That warns you not to look at 20-, 25-year periods," he added.

Mr. Siegel noted the 21.5% fall in the S&P 500 in October 1987 was the fifth monthly period the index had dropped 20% or more. Three of the others occurred in the 1930s, he noted; one occurred in 1940.

Someone looking at the latest 25-year period might not have believed a [illegible] of more than 20% possible [illegible] 1987, he added.

A worldy view

Continued from page 73

States and United Kingdom) will have to grow slower (i.e., 1.5% to 2%).

Growth in the industrialized world is running around 3.5% — about 1 percentage point above target — and growth in the major current account deficit countries is running just about as fast as in the surplus countries.

Therefore, for central bankers to steer toward their target, it made sense that there would have to be a global tightening (causing our world yield curve to flatten, and a greater tightening by the deficit countries than by the surplus ones, causing the formers' yield curves flatten or invert more.

Sure enough, that is what we have seen during the past few months.

The world yield curve, defined as the difference between three-month rates and 30-year rates, flattened in the past several months. The world yield curve is now at its flattest slope since 1980 and slightly flatter than just prior to the October 1987 global stock market crashes.

Given the approximately one-year lead time between shifts in yield curves and effects on economies, we expect world economic growth, particularly growth in deficit countries, to slow significantly in about a year. That implies bonds, particularly in deficit countries, will be good investments in late 1989 or early 1990.

While the tightening is occurring at the same time as growth is strong, short maturities or cash should be favored over bonds, particularly cash in those countries leading the tightening — the United States, the United Kingdom, Canada and Australia.

While it is impossible to say for sure what sort of yield shifts we can expect ahead, the past could give some clues.

As mentioned, it normally takes about a year for changes in yield curve slopes to "bite." During these periods of faster than desirable growth, central bankers traditionally have tightened further, inverting the yield curves even more and setting the economy up for a deeper than normal contraction. This implies the near-term downside risks in global bond markets could be significant, but their long-term upside potential is even greater than the yield curves imply.

In watching these indicators, it is important to keep in mind the world's major bond markets can be divided into two types — those of the current account surplus countries and those of deficit countries.

The U.S. bond market is in the latter category, competing with the bond markets of other deficit countries (such as the United Kingdom, Canada and Australia) for the money being invested by the big surplus countries (such as Japan and West Germany).

To anticipate how the U.S. bond market and U.S. dollar will behave, changes in credit market conditions of deficit countries are most relevant.

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13 funds enter foreign arena

Top 200 funds with defined benefit assets invested overseas

($ millions)

Fund	Total	Equities	Fixed income
United Nations Joint Staff*	3,544	1,703	1,365
General Electric	1,900	1,200	700
AT&T	1,613	1,613	
GTE	1,140	780	360
E.I. du Pont de Nemours	1,046	297	749
Colorado Public Employees	895	895	
Los Angeles County*	884	806	
Ameritech	800	700	100
Oregon Public Employes	800	800	
Ford Motor	700	500	200
Prudential Insurance	645	365	280
World Bank	626	319	307
United Technologies	600	400	200
Illinois Teachers	550	500	50
San Francisco Employees	535	232	303
Tennessee Consolidated	518	373	145
Hawaii State Employees	492	492	
NYNEX	453	453	
Arizona State	434	434	
Caterpillar	408	408	
Illinois Municipal	376	272	104
Aluminum Co. of America	370	345	25
New York State Teachers	350	350	
Exxon	320	320	
Owens-Illinois	320	267	53
Kansas Public Employees*	295	219	
ITT	274	183	91
Connecticut Trust Funds	272	272	
Illinois State Universities*	272	212	
North Carolina Systems	267	162	105
Allied-Signal	245	245	
Southwestern Bell	244	244	
Amoco	243	243	
Alaska Retirement Systems	230	230	
Philip Morris	220	220	
Pacific Gas & Electric	219	219	
Monsanto	210	210	
S. New England Telephone	202	202	
Delta Air Lines	200	200	
Sears, Roebuck	192	192	
Army & Air Force Exchange	178	108	70
Hercules	173	173	
S. California Edison	161	73	88
American Airlines	160	130	30
Sun	157	141	16
BP America	152	152	
Wisconsin Investment Board	150	75	75
USX	150	150	
Honeywell	142	84	58
Unisys	141	141	
Travelers Insurance	139	116	23
Inland Steel Industries	125	125	
Minnesota Mining & Mfg.	121	101	20
Kraft	120	120	
Nat'l Rural Electric Co-op	99	99	
Nevada Public Employees*	96		
Chevron	90	44	46
Aetna Life & Casualty	87	87	
Pennsylvania State Employes	76	76	
State of Delaware	74	29	45
Chicago Municipal	71	71	
Eli Lilly	70	70	
Armco*	68	42	
Mass. Teachers & Employees	60	30	30
Detroit Systems*	60	16	41
International Paper	60	60	
Atlantic Richfield	57		57
FPL Group	56	56	
Deere	50	50	
Shell Oil	50	50	
Utah State	50	50	
NCR	49	49	
CIGNA	47	47	
Commonwealth Edison	41	26	15
Episcopal Church	40	40	
American Stores	39	39	
Illinois State Board	38	38	
Digital Equipment	36	36	
Chrysler	31	31	
Bakery & Confectionery	23	23	
Bethlehem Steel	23	23	
Mobil Oil	20	20	
Motorola	20	20	
Trans World Airlines	17		17
Goodyear Tire & Rubber	9		9
Hospital & Healthcare Workers	9		9
Louisiana State	1	1	
Total	**27,590**	**20,986**	**5,786**

* Includes other overseas assets

By Curtis Vosti

Overseas investing received a shot in the arm from public funds in 1988, as six public funds from among the nation's Top 200 pension funds entered the international arena for the first time, investing a total of $2.669 billion.

Overall, 13 pension plans in the Top 200 invested $2.85 billion in 1988 in their first investments internationally.

Among those making the initial foray into international, and the amount they invested, were: the Public Employees Retirement Association of Colorado, $895 million; the Los Angeles County Employees' Retirement System, $884 million; and the New York State Teachers' Retirement System, $350 million. Total international investments of defined benefit plans among the Top 200 employee benefit funds stood at $27.59 billion as of Sept. 30.

Top 200

"The public funds — that's where we are seeing some interest," said Philip Swan, assistant vice president for Capital Guardian Trust Co., Los Angeles. "It's a growth area. The corporations have been there awhile."

Capital Guardian was the most frequently mentioned manager of international assets among the Top 200 funds; the firm had 14 funds as clients.

The other managers used the most by funds in the top 200 included, in order, State Street Bank and Trust, Boston; J.P. Morgan Investment Management Inc., London; Morgan Grenfell Investment Services Ltd., London; and Baring International Investment, London.

Mr. Swan said Capital Guardian's popularity may be due to its bottom-up approach uses several managers for each portfolio to lessen the volatility of the investment.

In 1988, international investing by pension funds did not experience the usual "clawback phenomenon," according to R. Duncan Fordyce, senior vice president for InterSec Research Corp., Stamford, Conn. "In general, we are seeing a bit of an increase in expenditures to Japan and a cutback in United Kingdom investing modestly in favor of expenditures in Continental Europe," he said.

He said the "clawbacks" — where pension funds, after a period of above-average performance, take profits in order to return to previous allocation targets — "tapered off dramatically" in the second and third quarters.

"We saw very little clawbacks, relatively speaking," Mr. Fordyce said. "The plans are more willing to leave their chips on the table."

One fund which did reduce its international investments to return to previous allocations was GTE Service Corp., Stamford, Conn. In 1987, GTE reported $1.81 billion invested internationally. In 1988, the firm lowered those investments to $1.14 billion, a drop of 37%.

Bob Hunt, senior investment manager for GTE, said that the drop does not mean the firm is less enthusiastic about international investments.

"Over the next five years, we are probably positive about increasing our international investments," he said.

As of Sept. 30, 1987, total international investment by the Top 200 was $31.896 billion. That total, however, included overseas investments by defined contribution plans, while the 1988 figure does not.

Missing from the ranks of international investors as of Sept. 30 were such heavyweights as the Teachers Insurance and Annuity Association — College Retirement Equity Fund, with more than $3 billion in international investments in 1987, and Bechtel Power Corp., San Francisco, with its $354 million investment internationally in 1988.

All told, $3.194 billion in international investments listed in 1987 came from plans that were not included in 1988 because they have defined contribution plans. The 1988 total also is lessened by $1.383 billion because some funds — including U S West, Denver, which listed $885 million in international investments in 1987 — did not complete a survey questionnaire. Another $344 million in foreign investments reported as of Sept. 30, 1987 were from plans no longer among the Top 200.

Some funds, however, did eliminate their foreign investment positions from those reported for 1987. About $170 million in international holdings were sold and not reinvested by funds among the Top 200. "Our international investment was is one security

Continued on page 78

EAFE up for year, quarter

The Morgan Stanley Capital International Europe Australia Far East Index rose 15.8% for the fourth quarter, and returned 28.9% for 1988.

The Morgan Stanley World Index, which includes returns from the Unites States and Canada, returned 10.8% for the quarter and 21.2% for the year, as measured in U.S. dollars and without dividends reinvested.

Norway was the top performing country for the fourth quarter, returning 25.9% in U.S. dollars and without gross dividends reinvested, and 26.5% with gross dividends reinvested, according to Morgan Stanley.

Other top performing countries for the quarter, (returns given in U.S. dollars and, respectively, with and without gross dividends reinvested) included Japan, at 18.7% and 18.5%; France, at 18.5% and 17.9%; Sweden, at 18.2% and 17.6%; and Denmark, at 18.1% and 17.5%.

A commentary to a release

Continued on page 78

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Revised targets mulled

By Carol Wiley

Pension fund executives might need new performance benchmarks for the new wave of dedicated and immunized portfolios.

The use of these structured portfolios has surged since the Financial Accounting Standards Board Statement 87 now requires corporations to use market-related interest rates to value pension plan liabilities and since pension executives and their bosses are more savvy about the relationship between assets and liabilities.

Structured portfolios — also referred to as enhanced or duration-targeted portfolios or asset/liability matching — are customized to meet a pension plan's defined liabilities. And because the portfolios are customized, and can include asset classes besides bonds, the benchmarks also should be customized, industry observers contend.

Still, it will take time for pension fund executives to adjust to the idea that the usual indexes probably won't correlate to the performance of their structured investments or to the advisers who manage them.

Judith Freyer was director-investor relations and institutional investments at UGI Corp., Valley Forge, Pa., when The Boston Co. was hired to manage $23 million of the $120 million defined benefit plan in a structured portfolio with performance results tied to UGI's pension liabilities. (Another $23 million is similarly managed by Fidelity Management Trust Co., Boston.)

"We wrestled over FASB the better part of a year," working with Goldman Sachs & Co. on asset/liability studies, said Ms. Freyer, who joined the Board of Pensions of the Presbyterian Church (U.S.A.), Philadelphia, as assistant treasurer in November.

"Intellectually, (structuring) sounds fine and makes sense, but there's an innate bias toward equities," she said.

With that bias, according to managers, comes a need to see traditional, overall performance numbers.

"The performance game gets translated differently in these contexts, but it's still there," said Fred Grauer, chairman of Wells Fargo Investment Advisors, San Francisco. Wells has close to $5 billion in structured products.

The problem now, according to Mr. Grauer and others, is to develop performance measurement systems for managers who specialize in meeting a pension fund's defined liabilities.

"There's a degree of flying blind, no doubt about it," Mr. Grauer said.

"We think there's a trend away from beating the market and comparing managers' performance; rather, we see a trend to a defined liability you have to beat, and performance results are less important," said G.A. David Gray, director of fixed income for structured investment products at The Boston Co., which has 10 clients and $700 million in all of its structured portfolios. Of those 10, however, only one is currently using a customized benchmark. A presentation was made in early December to a prospective client who also requested a similar customized benchmark.

Mr. Gray would not name the client or prospective client.

On the equity side at The Boston Co., Edgar Peters, manager of asset allocation and the structured investments products group, has talked to more than 10 prospective pension fund clients in the past 12 months.

"The goal should be to increase the funding status of the pension plan," Mr. Gray said. "Let's no longer think in terms of beating the indexes; let's think in terms of beating the liabilities and enhancing the surplus."

But managers agreed the concept is hard to sell to pension executives and members of their investment committees, who probably always will require overall performance numbers when hiring a manager.

At National Investment Services of America Inc., Milwaukee, Jeffrey Bryden, vice president, is coordinating a study that could result in a universal framework for evaluating dedicated portfolios. In addition, the firm has two pension fund clients using a quantitative package that helps them use stocks to meet pension liabilities. Mr. Bryden would not release the names of the clients.

NISA has 25 pension fund clients and about $5.5 billion in dedicated portfolios.

Bankers Trust Co. — Investment Management Group, New York, has one unidentified client with two structured portfolios that uses customized bond indexes as benchmarks to meet its individual liabilities, according to Patricia Mahoney, vice president and manager-structured bond portfolios.

Like the other managers surveyed, she sees no galloping trend toward customized benchmarks "but there's at least more discussion," Ms. Mahoney said.

FASB 87 had a part in the surge in interest of structured portfolios and, with that, an interest in customized benchmarks, but structured investments also "are part of a greater move toward looking at asset allocation a: 1 how it relates to liabilities. It's a natural progression," she said.

Hyacinth Topinka, senior manager-search analyst in the Deerfield, Ill., office of SEI Corp., doesn't expect to see the day when pension fund sponsors will request managers who can beat a defined liability rather than those with good, overall performance numbers.

"I think there was one once," she said. "And they had money coming out of their ears."

Chase Investors Management Corp., New York, with more than $2 billion in structured investments, formulates customized indexes and performance numbers for its pension fund clients because "clients are more comfortable with seeing a rate of return than a discount yield method," said Mary Walsh, vice president.

"The lack of performance measurement (among structured managers) is one reason plans are moving so slowly toward FASB type investments," she said.

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EAFE index up

Continued from page 77

from the Morgan Stanley Capital International Perspective attributes the strong performance by continental European countries to increased merger and acquisition activity as firms position themselves for the dissolving of European trade barriers in 1992.

Meanwhile, in bonds, the Salomon Brothers World Government Bond Index jumped 5.14% in the fourth quarter 1988, making the year-end return 4.5 '%, according to Salomon Brothers Inc., New York.

The Salomon World Bond Index, based in U.S. dollars, returned 2.12% in the first quarter, −3.57% for the second quarter and 0.81% in the third quarter.

U.S. government bond returns, which account for almost half of the index, returned 0.98% for the quarter and 7.04% for the year. The year's first three quarters returned, respectively, 3.42%, 0.86% and 1.6%.

The Non-U.S. Government Bond Index, also expressed in dollars, returned 8.67% for the quarter and 2.36% for the year. The year's first three quarterly returns were, respectively, 1.09%, −6.96% and 0.14%.

Japanese bonds led the quarter with a 10.54% return, finishing the year at 3.03%.

Other strong government bond performers for the quarter included Canada, with 8.69%; the United Kingdom, with 8%; France, with 8.04%; and Australia, at 8.49%.

A report by Salomon attributed the strong Canadian and Australian performance to currency appreciation and high bond market yields. The Australian bonds also led the year-end returns, with 27.79%. Also strong were the Canadian bonds, ending the year at 19.41%.

The Salomon Brothers Non-U.S. Currency-Hedged World Government Bond Market, expressed in U.S. dollars, returned 2.89% for the quarter and 9.09% for the year. For the year's first three quarters, the index returned, respectively, 3.75%, 0.29% and 1.9%.

The company's Currency Hedged World Bond Index, in U.S. dollars and including U.S. performance, returned 2.05% for the fourth quarter and 8.28% the year. The index returned 3.58%, 0.54% and 1.8%, respectively, for the year's first three quarters.

Vilas Gadkari, Salomon vice president, said the firm recommends the currency-hedged positions because it gives long-term investors diversification and similar returns with less risk. ■

1988 EAFE vs. S&P 500 index returns

Month	S&P 500	EAFE
January	4.35	1.83
February	4.48	6.71
March	−3.06	6.19
April	1.27	1.49
May	0.64	−3.16
June	4.66	−2.60
July	−0.24	3.18
August	−3.56	−6.47
September	4.29	4.41
October	2.90	8.60
November	−1.80	6.0
December	1.77	0.6

Source: Rogers, Casey & Barksdale Inc. and Frank Russell Co.

13 funds

Continued from page 77

from Japan, and we thought it was fully valued, so we sold it," said Steve Moore, director of research for the pension plan of the University of California pension plan, which had $39 million invested internationally in 1987.

Although Mr. Moore said he thought many of the Japanese investments were overvalued, he added it would be wrong to generalize that the university's pension fund would not again invest internationally.

FINANCING

Audit panels being put on the front line

Power being broadened

By Marcia Parker

Once low-key audit committees are becoming powerful forces in corporations as executives respond to public concerns about mounting business failures, takeovers, the accuracy of corporate reporting and corporate governance.

Two new Conference Board surveys of top executives and chief financial officers found audit committees have changed dramatically in the past 10 years. The committees have been enlarged and given broader responsibilities, such as reviewing quarterly statements and oversight of corporate behavior. These duties extend far beyond the traditional focus on internal and external auditing, financial controls and reporting, which remain key audit committee concerns.

Interviews by *Pensions & Investment Age* with a dozen chief financial officers, accounting industry professionals and audit committee members at various companies drove home the point that audit committees have gradually expanded and sharpened their focus. The more dramatic changes have been seen in midsize and small companies, some of which only recently created audit committees.

That is due to many companies listed on NASDAQ trying to meet a February deadline requiring them to have audit committees. The American Stock Exchange also is considering a similar requirement, although it now encourages listed companies to have committees. The New York Stock Exchange already requires listed companies to have audit committees.

Lee J. Seidler, senior managing director at Bear Stearns & Co., New York, and an acknowledged expert in the field, said audit committees are doing a better job across the board. He said they've become more independent, have strong access to top executives and their members are prepared to ask tough questions. At Bear Stearns, "there's no shyness on the part of the audit committee. Members are used to demanding and nailing," said Mr. Seidler, who sits on the audit committees of two public companies.

Jeremy Bacon, senior research associate and author of a Conference Board report on the surveys, said several developments have focused attention on audit committees and exerted pressure for change.

The growing attention being paid to corporate governance and the board of directors has filtered down to the audit committee, which is a board committee, he noted. Other catalysts include widespread corporate restructuring, the growing role of internal auditing, a crisis in confidence in public accounting, recommendations by the 1987 National Commission of Fraudulent Reporting, and regulatory and legislative initiatives.

A panel set up to monitor progress since the commission, also known as the Treadway Commission, issued its recommendations recently released its first progress report. It said several groups, including the American Institute of Certified Public Accountants, the Financial Executives Institute, the Securities and Exchange Commission and the House Energy and Commerce Subcommittee on Oversight and Investigations, have initiated actions to improve company financial reporting. Some of them have developed guidelines on internal controls and auditing standards. The SEC has adopted new disclosure requirements, and Energy and Commerce Chairman John Dingell, D-Mich., is expected to introduce legislation this year on some of the Treadway Commission's suggestions.

The business research group found audit committees now deal with a broader agenda that has been formalized. "Most of the tasks that stretch the committee's reach beyond financial issues relate to monitoring corporate behavior, both the firm's as a whole and on the part of individual executives or other employees" or directors, according to the Conference Board report.

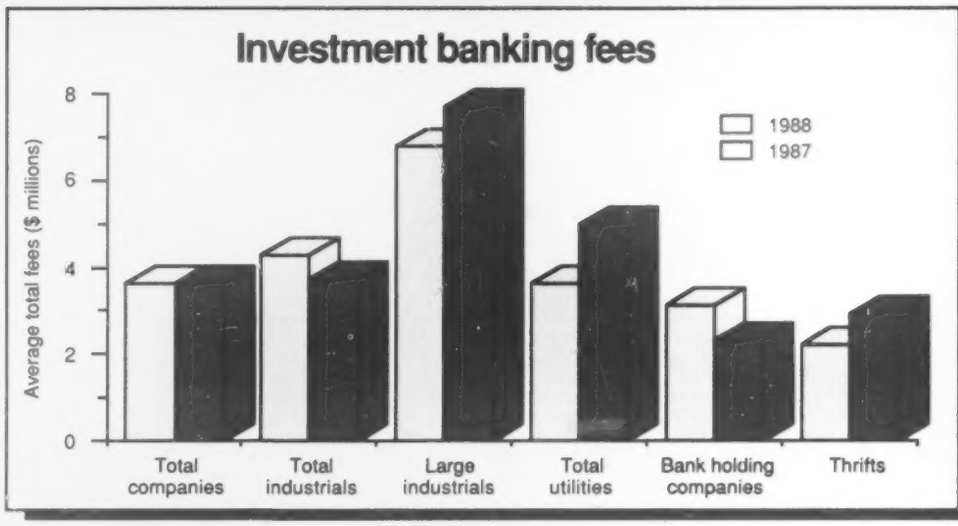
Many audit committees now oversee the content of, and compliance with, corporate policies governing ethical behavior and employee conflicts of interests. Some committees also monitor compliance with specified laws such as the Foreign Corrupt Practices Act.

Those who responded to the Conference Board surveys said their audit committees had investigated a wide range of situations or allegations, including insider trading violations, conflicts of interests, kickback payments and the fairness of a proposal to go

Continued on page 80

Percent of committees reporting authority

	Written	Presumed	Total
Meet privately with outside auditors	26%	72%	98%
Meet privately with internal auditors	21	72	93
Initiate investigations	17	69	86
Monitor conflicts of interests	25	51	76
Monitor code of ethics	24	50	74
Monitor compliance with laws	18	54	72
Review financial statements	20	48	68
Monitor RICO	8	56	64
Hire outside expert advice	12	49	61



'89 financing issues

Debt, investment bank fees tops on list

By Marlene Givant Star

GREENWICH, Conn. — The growing importance of private debt and competitive pressures on investment banking fees will be dominant themes in this year's corporate financing scene, according to a survey of U.S. corporations.

Ironically, the labor-intensive and expensive transactions corporate executives will demand this year — such as private issuance and cross-border mergers and acquisitions — will force them to rely more heavily on investment banks, which they have grown to distrust in light of the banks' increased role in hostile takeovers. In addition, corporate executives think investment banking fees are unjustifiably high, according to "Tensions in Investment Banking Relationships," a survey report by Greenwich Associates, Greenwich, Conn.

"Because of their greater access to deep pools of capital and the emphasis on their own profitability, there is both a temptation and a tendency for investment bankers to put themselves in an adversarial position, instead of an advisory one, vis-a-vis their own clients," said James A. Bennett Jr., a vice president of Greenwich.

"The corporate executive is asking himself, 'If I refuse their advances, could they put me in play?' The answer: 'Absolutely.' "

But corporate executives are heartened that the growing competition in the industry could put downward pressure on fees.

Many of the new contenders will benefit from cross-border mergers and acquisitions business, which is expected to outpace domestic activity in terms of growth in demand in 1989.

Continued on page 80

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Debt, fees top

Continued from page 79

In addition, demand is expected to double this year for private placement of debt and for currency swaps. Use of interest rate swaps and public bond offerings should increase 50% or more from current levels, according to the report.

The typical large company maintains three or four domestic investment banking relationships — its most important sources of domestic investment banking services. That average is an increase from previous years, and the trend was reflected in all market segments.

Five different investment banking services were used by at least 25% of the industrial companies surveyed in 1988: advice on domestic mergers and acquisitions; repurchase of common stock; commercial paper issue; domestic divestiture; and advice on takeover defense.

Companies tend to accept high fees in high value-added areas like mergers and acquisitions, only commodity-type products such as debt issuance and commercial paper business are price sensitive, according to the report.

The majority of the nearly 1,500 corporate financial executives responding to the survey said investment banking fees are too high or much too high, but those paying the highest fees said they probably will go on doing so.

Forty-seven percent said fee levels were too high vs. only 29% who said "you get what you pay for."

Total investment banking fees paid by the nearly 1,500 companies surveyed remained the same as in 1987 — an average of $3.6 million. The average fee paid by the typical industrial company, however, rose to $4.3 million during the period, up 15% from the previous year.

Fees for the 100 largest industrials averaged $10.2 million, down more than 20% from 1987, while the balance of the top 500 industrials paid average fees of $3.8 million in 1988 — up from $3.3 million in 1987.

Merger and acquisition fees paid by the typical company during the past 12 months averaged $1.2 million, or one-third of the total fees paid.

On average, a company paid one-half of total fees to its most important investment bank.

One-fifth of all industrial companies expect to pay a fee for advice on international mergers and acquisitions this year — up 50% from last year — and nearly one-third of the largest industrials expect to do so.

Such cross-border activity is likely to be a boon to foreign investment banks because "international deals are typically smaller and they tend to be more complex and time consuming. As a result, some (Wall Street) investment banks are looking hard at the opportunity cost — and are questioning whether they want to be involved," said Charles D. Ellis, Greenwich managing partner.

Commercial banks were twice as successful in attracting international mergers and acquisitions business as domestic deals — doing business with 18% of the 37% of companies they solicited. The banks also solicited 37% of companies for domestic deals, but only 9% of the companies ended up using the commercial banks.

Commercial banks have an advantage in cross-border mergers and acquisitions because they have a larger network in more countries than investment banks, according to John Colon, a vice president of Greenwich.

The proliferation of commercial banks, investment banking boutiques and foreign firms is viewed by companies as the most positive development in investment banking today.

Of the newcomers, the top U.S. commercial banks are making the biggest inroads, especially in commercial paper and private debt placement. They also are important players in risk management, which they increasingly are tackling on a global basis as an adjunct to their own funding needs, the report said.

"Commercial banks are moving toward what they call structured finance: the bringing together of a series of product capabilities that uses a bank's balance sheet to facilitate or precipitate a transaction. . . . The bank serves as adviser to the company, sells one of the company's operations to raise cash, lends the company money and organizes a series of swaps and options to fix the costs of that money," said Mr. Bennett. ■

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Audit panels

Continued from page 79

private.

As a result of the expanded duties, the audit committee must use different approaches to monitoring and reviewing, and its members must be able to ask a new line of probing questions, according to the survey report.

Since 1978, there has been a significant increase in the percentage of companies that have a written description of the audit committee's responsibilities, climbing to 83% from 69%. The use of a separate committee charter or mission statement has gained ground, with 15% of companies reporting the practice, according to the report.

Philip Peller, partner and director of the accounting and audit practice at Arthur Andersen & Co., New York, said many of his large corporate clients had re-examined and strengthened bylaw and charter sections dealing with audit committees.

Audit committee membership, which traditionally has consisted of mainly outside directors, also has risen. Members are spending more time on their job than ever before and expect to work even harder in the future because of the increased duties, the complexity of issues and the general trend toward more oversight and improved corporate governance.

Median sizes are now four members for manufacturing and non-financial services companies, up from three in 1978, and 4.5 for financial firms, up from four.

Audit committee members include fewer directors with relationships that might interfere with the exercise of independent judgment, especially former executives of the company and directors affiliated with banks serving the company. The study said 90% of the committees have no members with such a potential conflict of interest.

The committees also report more frequently, an average of three times a year, up from twice a year in 1978. Respondents to the Conference Board surveys gave the audit committee high marks for having brought about improvements in other traditional core areas of their role such as external and internal auditing. Many agreed the committee's work has improved both the full board's awareness and understanding of these matters and also its effectiveness.

"It has been an evolutionary thing . . . Most companies have placed audit committees in a position of responsibility," said Morton Solomon, a partner at KPMG Peat Marwick, New York. "There has been an emphasis on expanded communications between the audit committee and outside auditors. That certainly strengthens the role of the audit committees."

While the trend toward strengthening the audit committee is clear, the Conference Board found not all executives are convinced that is the way to go.

"This report supports the conclusion that the trend toward expanding the purview of the audit committee and giving it more clout has broad support," according to the report. "However . . . the findings also suggest that a significant number of people question the appropriateness of some elements of the trend or of concepts being proposed in connection with it."

Thirty-seven percent of the 121 CEOs and CFOs surveyed favored the trend toward an expanded role for the audit committee. Another 39% thought it was appropriate for many companies but not all, and the remaining 24% felt a broadened rule for the committee should be limited to situations where specific oversight is needed. Three-fourths of those surveyed said they were concerned that the added responsibilities being placed on audit committees would increase the risk of committee members being sued. But most believe indemnification, insurance and state statutory protection, as they are evolving, will offset additional exposure. Others expressed concern a powerful committee would compromise the difference between oversight and managing. ■

U.S. credit quality expected to slide

NEW YORK — The credit quality of U.S. corporations is likely to weaken this year, following 1988's negative trend, while companies based outside the United States probably will see stable or higher ratings in 1989, according to Standard & Poor's Corp., New York.

In its forecast, Standard & Poor's CreditWeek publication said downgrades of U.S. industrial, electric utilities and natural gas companies are likely to outpace upgrades in those sectors. Credit quality will be more stable for the transportation, financial institutions, telecommunications and international sectors.

Standard & Poor's cited three factors that will contribute to the weaker corporate ratings: a recession by year end that could exert downward pressure on ratings of domestic companies unprepared to cope in a tough economic environment; higher interest rates that could negatively affect many sectors; and industrial ratings that continue to be vulnerable to mergers and restructurings.

Overseas, the forecast is brighter. The rating agency said a wide range of corporate issuers learned their lessons from the volatility of the early 1980s, and have been implementing strategies to cope with such variables as fluctuating demand, changing regulation, intensified competition and skittish currency values. Upgrades, after steadily closing the gap against downgrades, surpassed the number of lower ratings in 1988. Even if a mild slowdown occurs in 1989, Standard & Poor's said most companies can weather it. ■

Asset growth

Continued from page 1

P&I Age surveyed the 1,000 largest U.S. pension funds for data as of Sept. 30. The profile section, which includes rankings as well as individual profiles of the Top 200 funds, begins on page 13.

Information was gathered through questionnaires and phone interviews, when those methods proved unsuccessful; statistics were provided by the 1989 Money Market Directory.

Assets of the 100 largest pension funds increased about 0.2% during the year ended Sept. 30, to $1.004 billion from $1.002 billion. Assets of the 50 largest funds fell 1% to about $791.77 billion from $794.2 billion, while the Top 25 funds remained about steady at $581.88 billion compared with $582 billion a year earlier.

In general, Top 200 defined contribution assets increased 7.6% to $205.317 billion as of Sept. 30, up from $190.9 billion a year earlier. For those funds that broke out their defined contribution assets, thrift and savings/401(k) assets jumped 19.6% to $80.883 billion from $67.6 billion the previous year; while profit-sharing assets fell 38.3% to $11.78 billion from $19.1 billion.

Defined benefit assets among the Top 200 funds declined 1.2% to $972.813 billion as of Sept. 30 from $984.9 billion the previous year.

The trend toward defined contribution plans, coupled with greater exposure of defined benefit plans to the equity market, probably account for the decline in defined benefit assets, Hewitt's Mr. Jones said.

"Defined benefit plans are being terminated, and new defined contribution plans are being created," he said. "This has been the trend for several years, and that affects the numbers.

"The 12-month period also includes the crash, and defined benefit plans have greater equity exposure than defined contribution plans," he said.

Among the Top 200, public pension funds fared the best, reporting a 4.1% increase in assets to $535.5 billion as of Sept. 30 from $514.4 billion a year earlier. Union plans lost the most, falling 3.7% to $35.9 billion from $37.3 billion. Corporate pension assets dropped 2.2% to $528.8 billion from $540.8 billion a year earlier.

Public funds' restrictions on equity investments worked to their advantage this year, said Harold Rossen, senior vice president of Prudential-Bache Securities Inc., Detroit.

Also, public funds "are experiencing greater contributions than corporate plans," Mr. Jones said. "Corporate plans are being funded at a relatively low rate currently because their pension plans are so well-funded, and that's not true of public funds." But public fund contributions are drying up as well (see related story on this page).

The aggregate asset mix of the 1,000 funds was 41.9% stocks, 32.4% bonds, 10.7% cash, 4.2% real estate equity, 3.9% guaranteed investment contracts, 0.6% annuities, 0.9% mortgages, 1.8% mortgage-backed securities and 3.6% in other investments.

The average defined benefit asset mix of the Top 200 funds revealed a wariness of the stock market. The average stock commitment decreased 4.3 percentage points to 42.8% from 47.1% a year earlier; bond investments went up 3.7 percentage points to 35.3% from 31.6%.

Assets in cash were 9.1% vs. 8.2% the previous year. Real estate equity also increased, representing 4.3% of the assets, compared with 3.4% a year earlier. Mortgages remained constant at 1.4% of assets.

All other asset classes showed decreases. GICs comprised 1.6% of defined benefit assets as of Sept. 30, compared with 2.3% a year earlier; annuities 0.7%, compared with 1%; mortgage-backed securities 3.3%, compared with 3.4%, and the other category was 1.5%, compared with 1.6%.

The average asset mix of corporate funds in the Top 200 as of Sept. 30 was 48.6% stocks, compared with 54.5% a year earlier; 29.8% bonds, compared with 23.9%; 9% cash, up from 8.2%; 5.1% real estate equity, up from 4.2%; 2.4% GICs, down from 3.6%; 1.2% annuities, compared with the previous year's 1.7%; 0.3% mortgages, down from 0.6%; 1.6% mortgage-backed securities, up from 0.9%; and 2% other investments, down from 2.4%.

Top 200 public funds decreased their equity investments to 35.2% as of Sept. 30, down from 39% a year earlier. Bond investments were up to 41.4% of assets, from 40.3%; cash was up to 9.7%, from 8.2%; real estate equity up to 3.4%, from 2.5%; GICs, up slightly to 0.5% from 0.4%; mortgages up to 2.4%, from 2.2%; mortgage-backed securities, down to 6.2% from 6.6%; and other up to 1.2%, from 0.8%.

The average asset mix of the Top 200 union plans was 34.6% stocks, compared with 38% a year earlier; bonds 45.4%, compared with 39%; cash 8.8%, compared with 10.1%; real estate equity 3.4%, down from 3.9%; GICs 2.2%, up from 1.8%; annuities 2%, compared with 2.4%; mortgages 2.1%, up from 1.7%; mortgage-backed securities 1%, down from 1.7%; and other investments 0.5%, down 1.4%.

The average asset mix for defined benefit funds in the Bottom 800 funds showed similar shifts in strategies.

As of Sept. 30, those funds had 41.7% in stocks, compared with 44.4% a year earlier; 31.5% in bonds, compared with 29.8% a year before; 11.3% in cash, up from 10.4%; 4.1% in real estate equity, up from 4%; 0.8% in mortgages, down from 1.3%; 1.3% in mortgage-backed securities, down from 2.1%; 4.9% in GICs, up from 3.5%; 2.1% in international, down from 2.4%; 0.6% in annuities, compared with 1.2%; 0.4% in venture capital, down from 0.5%; 0.04% in oil and gas, up from zero; 0.03% in LBOs, up from zero; 0.1% in private placements, down from 0.3%; and 1.13% in other, compared with 1.1% a year earlier.

For the first time, the Top 200 sponsors were surveyed on the asset mix of their defined contribution plans. As of Sept. 30, the average asset mix for those plans was 29.9% GICs; 22.6% stocks; 18.5% company stock; 13.7% bonds; 9.5% cash; 5.6% other investments; and 0.2% in annuities.

Ten pension funds dropped out of the Top 200 since last year's survey. They are: Citicorp, which fell to No. 275 in the rankings due to a termination; General Foods Corp., which was purchased by Philip Morris Inc. and is now included in its profile; Pan American World Airways Inc., which fell to 213; Unocal Corp., which fell to 216; Merck & Co. Inc., which fell to 219; Times Mirror Co., which fell to 276; Public Employee Retirement System of Idaho, which fell to 202; Teamsters, New England Trucking Locals, which fell to 212; North American Philips, which fell to 209; and Teledyne Inc., which fell to 207.

New to the Top 200 this year are: State Farm Insurance, at No. 118 in the rankings; the Federal Retirement Thrift Investment Board, at 130; Phillips Petroleum Co., at 165; Indiana State Teachers' Retirement Fund, at number 182; United Parcel Service, at 189; Evangelical Lutheran Church in America, the fund resulting from the merger between the Lutheran Church in America and the American Lutheran Church, at 191; Sheet Metal Workers International, at 193; Texas Instruments Inc., at 197; Delaware State Employees' Retirement Fund, at 198; and NCR Corp., at 200.

An examination of other Top 200 data revealed:

- Fewer assets were invested in index funds.

  Assets in stock index funds dropped 19.1% to $114.3 billion as of Sept. 30, from $141.3 billion the previous year. Of that amount, $41.3 billion was in internally managed stock index funds, a 34.4% decrease from $63 billion a year earlier.

  Bond index funds also declined, falling 9.3% to $40.8 billion from $45 billion. Of that amount, $2.3 billion was run in-house, a decrease of 14.8% from $2.7 billion the previous year.

- Nine fewer funds among the Top 200 are managing assets in-house. Funds managing at least a portion of their assets in-house now total 116, down from 125.

  Internally managed assets fell 10.3% to $426.732 billion from $475.8 billion. Internally managed equities are down 27.5% to $139.614 billion from $192.6 billion; fixed income was down 3.6% to $198.79 billion from $206.2 billion; cash was down 2.2% to $37.735 billion from $38.6 billion; and other internally managed investments totaled $31.937 billion, up 23.8% from $25.8 billion.

- Four more funds among the Top 200 have placed assets in dedicated or immunized bond products, bringing the total to 31 as of Sept. 30.

  Dedicated or immunized assets increased 7.5%, to $26.445 billion from $24.6 billion a year earlier. ■

ESOPs' roles

Continued from page 1

Rosen.

About 500 or 750 publicly traded companies have ESOPs, he estimated. Of those, only about 100 ESOPs own 10% or more of their company's stock.

The tax advantages "make (ESOPs) a little more attractive," Mr. Rosen said. He said corporations are lured by the combined attractions of leveraged ESOPs as an anti-takeover device, a benefit for employees and a tax-advantaged way of paying employee benefits.

In the Polaroid ruling, a Delaware court left in place the company's ESOP, even though it was enlarged to thwart an unwanted takeover by Shamrock Holdings Inc., a Burbank, Calif., concern that filed suit to disband the ESOP as an unfair defense. Shamrock, which according to a report owns 6.8% of Polaroid stock, has appealed the ruling.

The ruling acknowledged Polaroid increased the size of the ESOP to 14% of the stock from a previously planned 5% once the Shamrock takeover attempt became known. But it stated the ESOP also is designed to improve value to shareholders by redesigning the form of employee benefits.

When a company incorporated in Delaware is the subject of a takeover (as is Polaroid), state law requires the acquirer to accumulate 85% of shares outstanding or to delay the takeover for three years.

Mr. Rosen noted ESOPs set up solely as anti-takeover devices have been prohibited. But the Polaroid ruling would allow companies to set up ESOPs, even at the time of a takeover attempt, so long as management can demonstrate the plans help improve shareholder value.

At the United Shareholders Association Inc., Washington, Ralph V. Whitworth, director, called ESOPs "an excellent idea," so long as they are used to diffuse control and not concentrate control with management.

At Procter & Gamble, Mr. Smith said the company will make contributions to the new combined ESOP/profit-sharing plan based on the same formula used for the existing profit-sharing plan.

"Employees will receive the same annual benefit credit," he said. "Part of it will be funded by the ESOP with the tax credit and part will be funded by normal contributions" to the profit-sharing plan.

He estimated one-third of the contributions will be made to the ESOP, although the amount hasn't been determined.

Procter & Gamble plans to set up, as of July 1, the ESOP that will hold newly issued convertible preferred stock and effectively control 6% of the company's common stock.

Together with the 14% now held by the profit-sharing plan, the employee benefit plans will control 20% of the shares outstanding and could effectively block any hostile takeover.

Mr. Smith said Procter & Gamble will appoint several former corporate executives as trustees of the ESOP, the same arrangement the company uses for trustees of its profit-sharing plan. He said the design of the plan requires the trustees to vote unallocated shares in the ESOP in the same proportion as allocated shares.

Mr. Smith said the ESOP expects to obtain $1 billion in financing through private placements, possibly in the next few weeks. "We're working on that right now," he added.

The ESOP will use the debt proceeds to buy $1 billion in newly issued convertible preferred stock from Procter & Gamble.

To offset the dilutive effect of the new preferred shares, the company, in turn, will buy on the open market 12 million shares of common stock, worth roughly $1 billion at the recent price of $86 a share.

"I really don't know how long it will take, probably less than a year," he said. The company will try to time the purchases to avoid running up the price, he said.

(Procter & Gamble in the past year already has repurchased 1 million shares.)

The preferred stock will be convertible into common stock on a one-for-one basis, although other terms haven't been set, Mr. Smith said.

Using corporate employee benefit contributions and preferred stock dividends, the ESOP will repay the loan, guaranteed by Procter & Gamble, over 15 years.

Procter & Gamble can deduct the dividends used by the ESOP to repay the loan.

In addition, if Procter & Gamble stock rises in price, as the plan presumes, the increased value of the shares allocated to the plan will reduce the amount the company will have to contribute.

In combining the profit-sharing plan with the ESOP, Mr. Smith said the company will revise the investment option slightly to employees. Now, vested employees may elect to invest their profit-sharing contributions in a guaranteed investment contract or company stock. (Non-vested employees have to invest their contribution in company stock.) With the ESOP providing part of their profit-sharing benefit, vested employees will have less to contribute to GICs instead of company stock. ■

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